SCRATCH LIVE

1xxxx SCRATCHLIVE TTM 57SL OPERATORS MANUAL 1.8.0

serato™ RANE

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord and plug from being walked on or pinched particularly at plugs, convenience receptacles, and the point where it exits from the apparatus.
11. Only use attachments and accessories specified by Rane.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. The plug on the power cord is the AC mains disconnect device and must remain readily operable.
16. This apparatus shall be connected to a mains socket outlet with a protective earthing connection.
17. When permanently connected, an all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.
18. If rackmounting, provide adequate ventilation. Equipment may be located above or below this apparatus, but some equipment (like large power amplifiers) may cause an unacceptable amount of hum or may generate too much heat and degrade the performance of this apparatus.
19. This apparatus may be installed in an industry standard equipment rack. Use screws through all mounting holes to provide the best support.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Introduction

Please read this manual to get the most from your TTM 57SL and the included Scratch LIVE software. If you ever lose this, a new copy may be downloaded at *www.rane.com/ttm57sl.html*.

To keep up with the latest tips and software updates, visit the Official Scratch LIVE Forum at *scratchlive.net.*

Minimum system requirements

- At least one turntable or CD player.
- Computer with USB 1 port supporting Full Speed Mode (USB 1.1).
- Screen resolution 1024 x 768 or higher.
- Hard drive space for storing music.

Mac

- 1 GHz G4 with 1 GB RAM
- OSX 10.3.9 or higher (Intel Mac compatible)

Windows

- 1.5 GHz PC with 1 GB RAM
- Windows XP with Service Pack 2 or higher, or Vista. We recommend Windows XP over Vista for performance reasons. By using XP, you can have a lower latency (for a better vinyl feel) and better performance in general.

Note: This is the *minimum* requirement to run Scratch LIVE. We recommend a higher spec computer, and particularly if you have a large library, you will benefit from having more RAM.

Note: No sound card is necessary.

Check List

These items are included with the TTM 57SL in the box:

- Scratch LIVE software install disc.
- 2 (two) control CDs.
- 2 (two) control records.
- 1 USB cable.
- IEC C5 line cord.
- Package of 4 rubber feet.
- Quick Start Guide and this manual.

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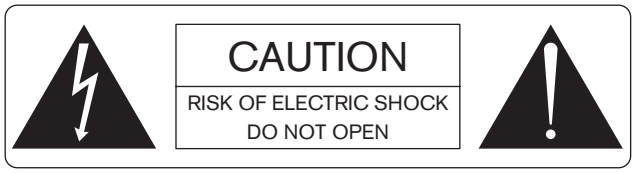
WARNING



To reduce the risk of electrical shock, do not open the unit. No user serviceable parts inside. Refer servicing to qualified service personnel.

The symbols shown below are internationally accepted symbols that warn of potential hazards with electrical products.

This symbol indicates that a dangerous voltage constituting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

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TTM 57SL Mixer Overview

The TTM 57SL Performance Mixer combines the best technologies that Rane and Serato have to offer in a single high-performance mixer. The TTM 57SL fully integrates Rane's proven hardware and Serato Scratch LIVE, creating a whole new range of possibilities for your performance. *The TTM 57SL was specifically designed to work with Scratch LIVE and the available features are best served when used with Scratch LIVE. The TTM 57SL is also a very competent standalone performance mixer.*

Future proof

The features and functionality of your mixer will improve with each new release of the Scratch LIVE software – and all Scratch LIVE updates are free.

Scratch LIVE control surface

Control Scratch LIVE without taking your hands off the mixer. Navigate though your library, load tracks, hit cues, loop and control effects via the integrated control surface. Control includes an input for connecting a Footswitch for hands free looping, sampling and effects.

Effects

24-bit effects using Rane and Serato's award winning studio and live sound software technologies give you professional studio-quality sound. The mixer comes with Echo and Filter effects.

Advanced recording capabilities

Record your mix directly to hard drive. See page 30.

External sound card interface

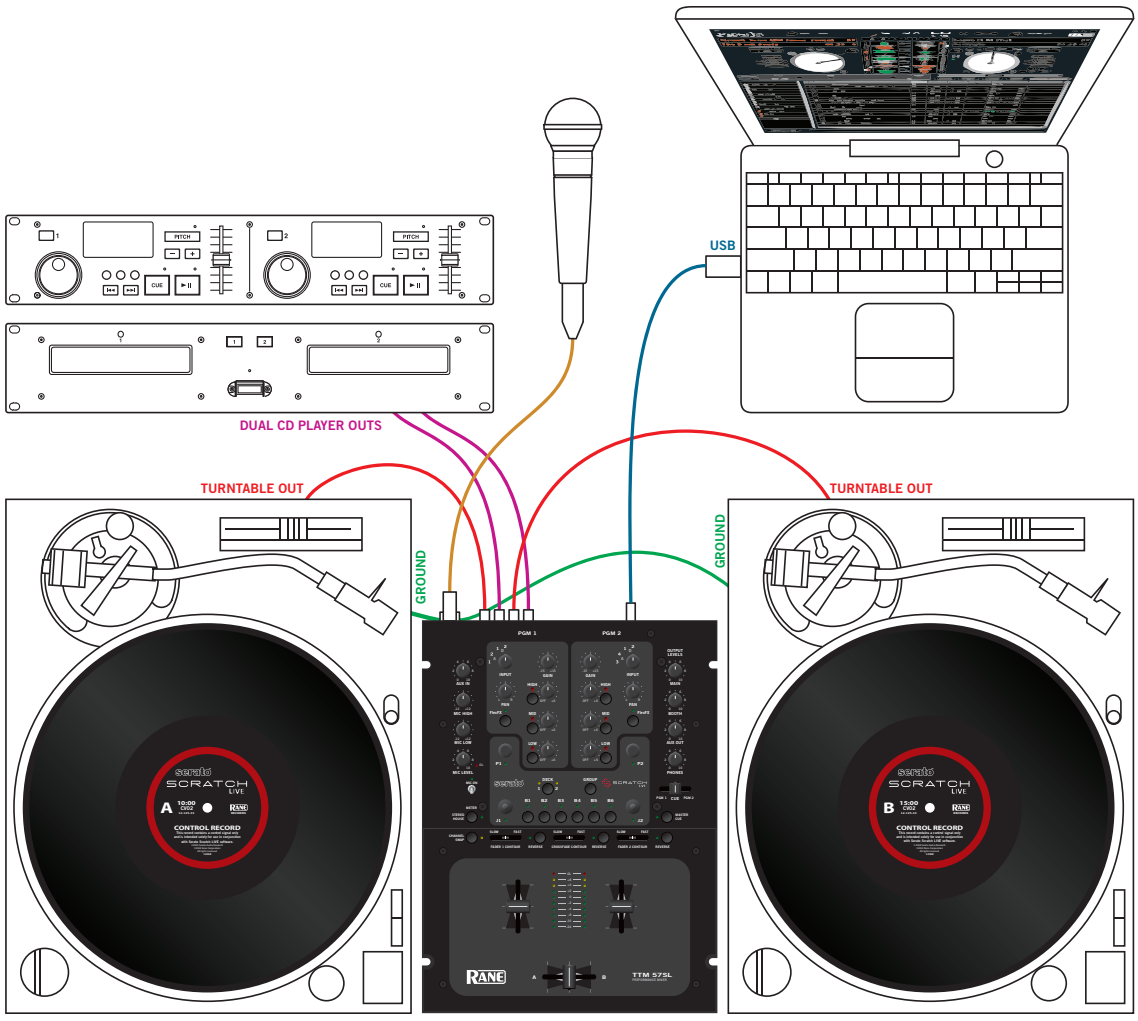
Use the TTM 57SL as a high quality USB audio interface for your favorite Mac or PC software — USB 1.1 with 8 channels of streaming 16 bit / 44.1 kHz audio with onboard DSP effects processing.

Magnetic faders

Rane's legendary patented magnetic faders are the fastest, most accurate, and longest lasting on the planet. The TTM 57SL uses the same faders and performance oriented layout that made the TTM 56 famous.

Hardware features

- Internal universal power supply works in almost any country.
- 4 line / phono switchable inputs.
- "Kills" on each EQ band, on each bus; six total.
- Dual headphone outputs: ¼" jack and 3.5 mm mini-jack.
- Rane's famous "FlexFX" effects loop system, in addition to built-in effects.
- RCA, ¼" and XLR outputs, each with an independent volume control.
- USB 1.1 with eight channels of streaming 16-bit / 44.1 kHz audio.
- Mic input EQ and Engage switch.



TTM 57SL: The Hardware

The best way to understand the TTM 57SL is to learn the basic mixer without a computer first. Only after you are familiar with what this mixer can do on its own, then connect a computer and learn Scratch LIVE and the digital effects.

Connecting the Mixer

Leave the power unplugged until everything else is connected!

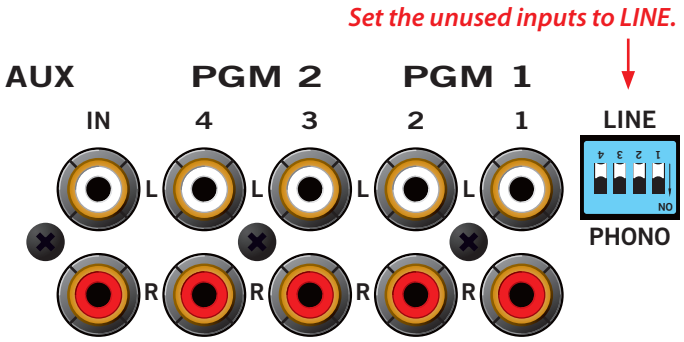
PGM Inputs 1-4 and Aux Input

The TTM 57SL has two stereo analog inputs for PGM 1 and two stereo analog inputs for PGM 2. Any of these analog inputs may be set for Line Input or Phono Input using the LINE / PHONO switches located on the rear panel. *Up* is LINE and *down* is PHONO. Unused inputs are best set to LINE. Attach your turntable's ground wires to the Phono Ground connectors.

Two stereo digital inputs from the USB connection, Digital 1 and Digital 2, are also available for PGM 1 and PGM 2. It is possible to select any combination of digital and analog signals.

Any of the four analog inputs may be used for Scratch LIVE vinyl emulation control. Input 1 or Input 2 may be selected for Scratch LIVE Virtual Deck 1 control. Input 3 or 4 may be selected for Scratch LIVE Virtual Deck 2 control. Control input sources are selected using the Scratch LIVE software. As will be discussed later in Program Controls, if a source has been selected for vinyl emulation control by the Scratch LIVE software, the number is back-lit as a reminder that the source is selected for control.

See the Aux input as described on page 6.



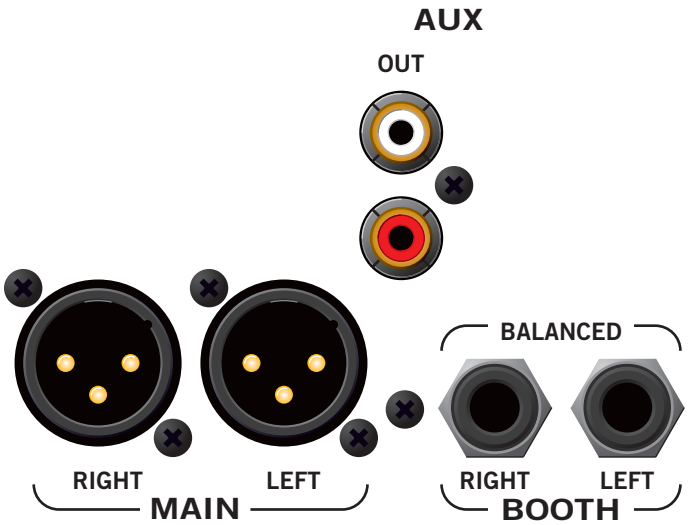
Mic Input

The Mic Input will accept either a balanced ¼" TRS (tip-ring-sleeve) plug or an unbalanced TS (tip-sleeve) plug. Any type of microphone may be used, except those that require phantom power to operate. See the Mic Level section on page 6.

Analog Outputs

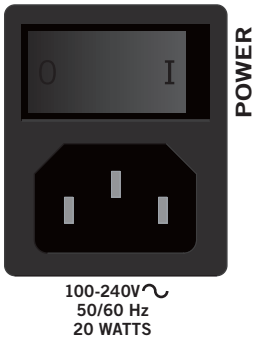
All analog outputs come from the same "Main Mix" signal. Main, Booth and Aux outputs each have their own Level control. The Main output is on balanced XLR jacks with pin 2 "hot" per AES standards. The Booth output is on balanced ¼" TRS (tip-ring-sleeve) jacks, though unbalanced TS (tip-sleeve) plugs may be used. The Aux output is on regular unbalanced RCA jacks. Because all signals are identical, users may use any of these outputs as the "main" output if a different cable type is required for system connection.

Rane recommends balanced wiring for the strongest signal and rejection of hum and noise. If your cable to the amp rack is less than 10 feet (3 meters), you can usually get away with an unbalanced cable. See the RaneNote "Sound System Interconnection" available at *www.rane.com* for details and cable wiring.



Power Supply

The TTM 57SL features an internal universal switching power supply that operates on any AC mains 100 to 240 VAC, 50 or 60 Hz (most places in the world). All that is required when traveling is the appropriate IEC line cord which is usually readily available. The universal supply is a major plus for the traveling DJ.



Program Controls

INPUT

Choose one of four **INPUT** sources for each Program.

PGM 1 selects:

- Analog-1 (**A1**)
- Analog-2 (**A2**)
- Digital-l (**D1**)
- Digital-2. (**D2**)

PGM 2 selects:

- Analog-3 (**A3**)
- Analog-4 (**A4**)
- Digital-l (**D1**)
- Digital-2. (**D2**)

The Analog Inputs come from your turntables or CD players. The Digital Inputs come from the Virtual Decks in the Scratch LIVE software.

If the number for A**1** or A**2** is illuminated, the Input has been selected by the Scratch LIVE software as the vinyl emulation input for **Deck One**. If the number for A**3** or A**4** is illuminated, the Input has been selected by Scratch LIVE as the vinyl emulation input for **Deck Two**. The backlit number is a reminder that this source *may be a control signal* and not audio. You may select a control input and use it as a normal analog input at any time without de-selecting it for control in Scratch LIVE, but remember that if you are playing a control record or CD, *you will hear the control signal*.

See Control source and Phono sensitivity on page 32.

GAIN

These "trim" controls adjust the selected input to match other inputs. These controls have a built-in Limiter that prevents the signal from clipping regardless of the Gain setting. If increasing the Gain does not increase the signal level, then the signal is already at maximum and the Limiter is controlling the signal to prevent clipping. The Gain range is +15 dB to off.

PAN

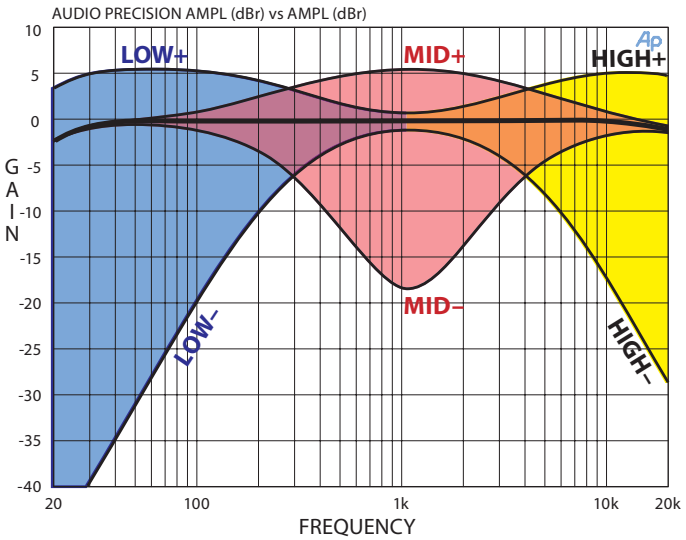
These controls pan the signal between the Left and Right outputs.

HIGH / MID / LOW EQ

The control range is **OFF** to **+6** dB. These use 2nd-order (12 dB per octave), Linkwitz-Riley, *Accelerated Slope*™ filters. The Low-Mid crosspoint is 300 Hz. The Mid-High crosspoint is 4 kHz.

Kill switches provide instant-off for each control. The skull lights red and the band is off when its Kill switch is pressed. When the switch is released, the EQ goes back to the setting of its EQ control. These switches may be set to momentary or toggle operation within the Scratch LIVE software.

See **latch kill switches** on page 32.



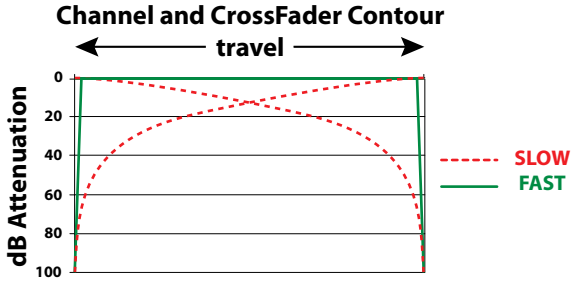
Interactivity of the *Accelerated-Slope*™ EQ controls

Faders

Magnetic faders are used for both Channel Faders and Crossfader (the same faders used in the TTM 56). Each fader has an independent Contour control and a Reverse switch.

CONTOUR

These controls provide a full range of fader adjustment from constant power (Slow) to extremely fast cut (Fast).



REVERSE

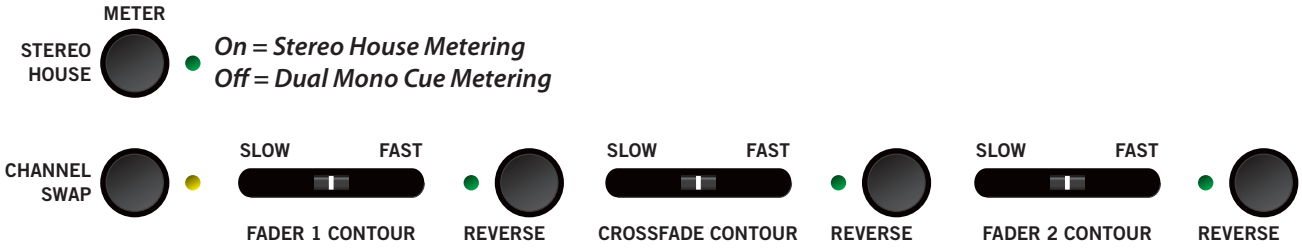
These switches are provided for each fader just to the right of each Contour control. Reverse toggles on (lit green) and off with each push of the switch. These switches are slightly recessed to prevent accidental engagement.

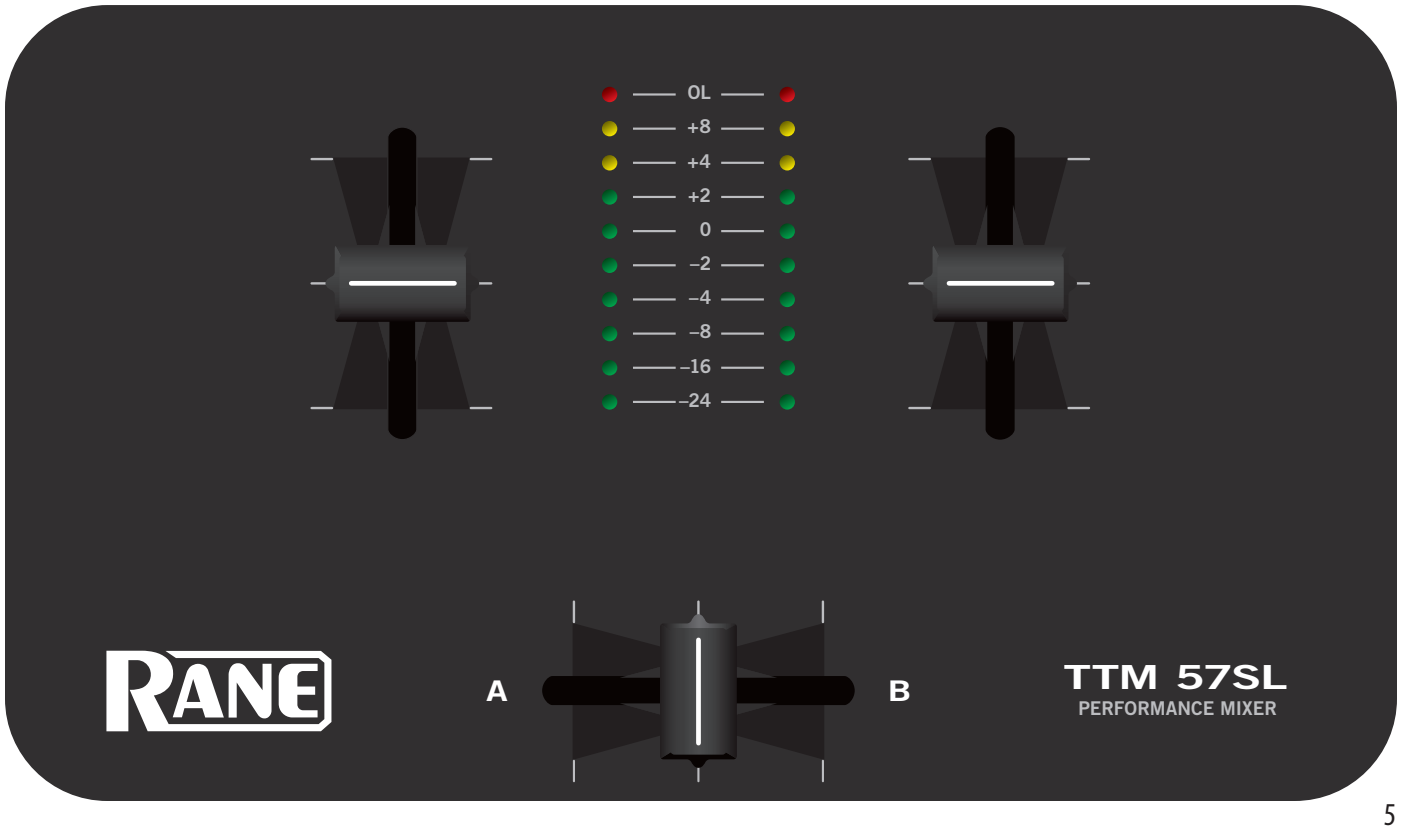
CHANNEL SWAP

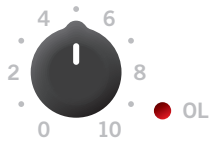
This button reverses the channel assignment for *all three faders*. Pressing the switch toggles Channel Swap on and off. When the yellow indicator is lit, Channel Swap is engaged. When channels are swapped, the PGM 1 Fader controls PGM 2 and the PGM 2 Fader controls PGM 1. PGM 1 is also moved from the **A** side of the Crossfader to the **B** side of the Crossfader. Fader Contour and Reverse controls stay with the original Fader. Fader 1 Contour and Reverse is always with the left Fader and Fader 2 Contour and Reverse is always with the right Fader. This switch is slightly recessed to prevent accidental engagement.

METER

The Meter has two modes of operation. The **METER** switch toggles between dual mono **CUE** and **STEREO HOUSE**. When the green indicator is lit, the Meter displays Stereo Mix, which is being sent to all three outputs. When the green indicator is off, the Meter displays Dual Mono Cue, to show the levels of PGM 1 and PGM 2. The red OL indicator lights at 0 dBFS (clipping). The Meter displays loudness with a solid string of lights, and how close you are to clipping with a moving dot. If the red OL indicator lights, turn the level down using the Gain control.







AUX IN

This level adjusts the level of the Auxiliary Input signal. This is a full-range control providing Off to +6 dB gain adjustment.

MIC LEVEL and EQ

The **MIC ON** switch engages the Mic. The green indicator is lit when the MIC is engaged.

MIC LEVEL adjusts the Mic gain over a range of Off to +50 dB. Set the gain where you want it and use the MIC ON switch to turn the MIC on and off.

The **OL** indicator lights when the signal reaches clipping. If this lights red, turn the MIC LEVEL down.

MIC HIGH and **MIC LOW** tone controls allow you to adjust the bass and treble of the MIC Input signal.

OUTPUT LEVELS

Output Level controls are provided for **MAIN**, **BOOTH** and **AUX** Outputs. All three outputs have the same Main Mix source. As shown previously in Analog Outputs (on page 3), the Main output is a balanced output on XLR connectors, the Booth output is a balanced signal on TRS connectors and the AUX output is an unbalanced signal on RCA connectors. This combination of jacks allows you to hook into other equipment regardless of the connector type.

Headphone Cueing

The Cueing system allows users to Pan the Cue from PGM 1 to PGM 2 or select the Master Mix. Cueing is also provided for the internal digital effects, covered on page 9.

Both 3.5 mm and ¼" jacks are provided. These can be used simultaneously, but using only one at a time yields more power to the headphones.

PHONES

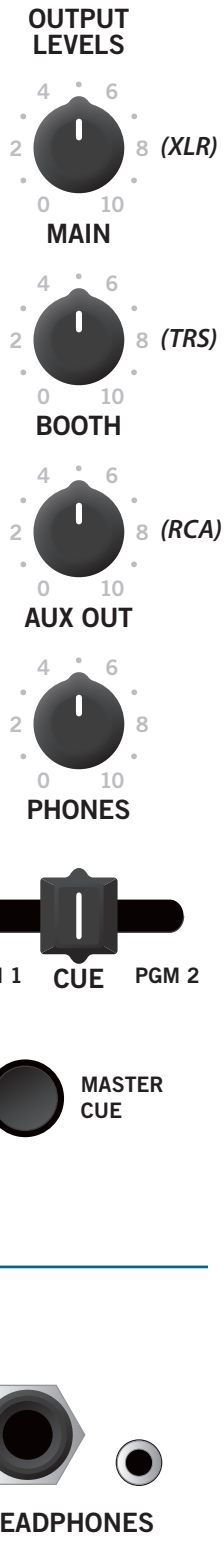
The headphone output can deliver very high volume to some headphones. To avoid pain, *never put headphones on your head before plugging them in*. Always start with the PHONES Level turned down, and then turn it up to the desired level.

CUE

This slider allows you to pan between PGM 1 and PGM 2 in the headphones when the Master Cue light is *off*. When Master Cue is *on*, this control has no effect. The cue signals are post-EQ and pre-fader.

MASTER CUE

Press this switch (green light *on*) to hear the Main Mix in the headphones. When this light is *off*, the Cue slider takes over.



FlexFX Loop

This stereo loop connects an external effects processor. The signals coming from the PGM 1 fader, the PGM 2 fader, or both may be routed to the FlexFX loop. This allows a single ***external*** effects unit to process PGM 1 and/or PGM 2. (See internal digital effects on page 8.)

FlexFX switches are provided for PGM 1 and PGM 2. Pressing the FlexFX switch lights the green indicator and sends the signal to the ***external*** FlexFX Loop. Press the switch again to stop sending signal to the loop (the green indicator goes dark).

FlexFX jacks are unbalanced mono ¼" TS (Tip/Sleeve). SEND jacks provide output to the effects processor. RETURN jacks provide input from the effects processor. Effects insert devices with a single in/out TRS jack place Send on the TIP and Return on the RING. For this application, you will need a "Y" cable, as shown below.

Send signals may be used as another auxiliary output, allowing PGM 1, PGM 2 or both to be routed to an external source (another amp or recorder).

If you wish to disconnect your external effects processor, it is not necessary to connect cables from FlexFX Send to FlexFX Return, as the TTM 57SL detects the presence of cables, and automatically connects the Send and Return when a cable is not connected.

Any signal assigned to the FlexFX Loop will be processed by any internal digital effect assigned to the AUX BUS. This has the advantage of allowing one of the two internal effects to be assigned to the AUX BUS and then assigning PGM 1 and/or PGM 2 to the FlexFX Loop.

USB Streaming Audio

There are eight channels of streaming audio over the USB port. Two stereo channels from the computer and two stereo channels to the computer. While internal processing is all 24-bit 44.1 kHz, streaming audio is 16-bit 44.1 kHz. If the blue indicator is on, the device is connected and communicating with the computer. For troubleshooting connection problems see page 41.

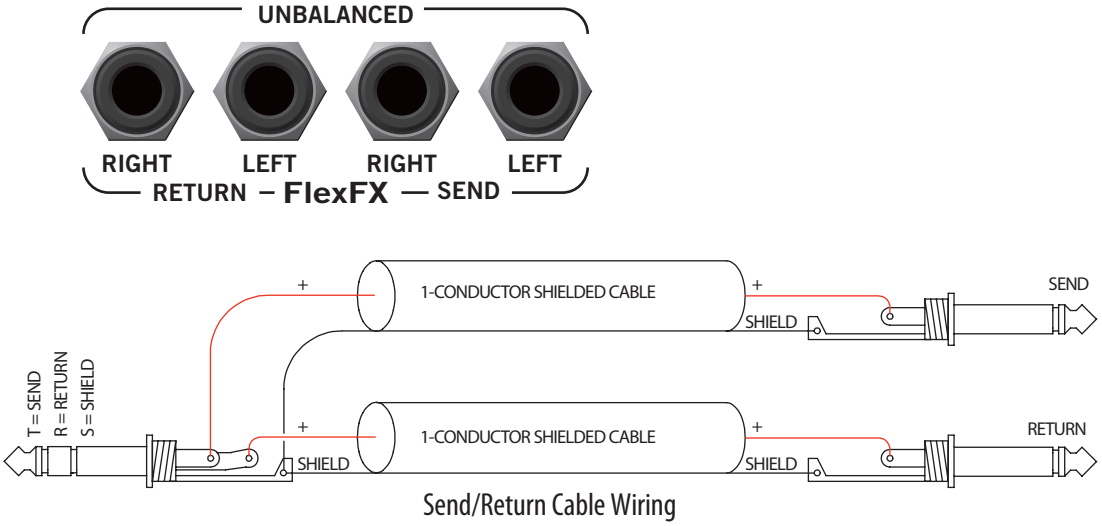
Two stereo signals *from* the computer appear as Digital 1 and Digital 2 inputs. These stereo digital signals may be selected for PGM 1 and/or PGM 2 (see source selection in Program Controls section).

As well as the 2 stereo channels sent to the computer for vinyl emulation control, one stereo pair can also be sent to your computer for recording. See Recording on page 30.

When not using the Scratch LIVE software, the mixer appears as two four-channel sound cards with stereo in and stereo out. The source for the stereo output channels must be selected in your software.

The following signals may be selected as the source for either digital output to the computer:

PGM 1 Pre- or Post- Fader
PGM 2 Pre- or Post-Fader
Main Mix
AUX BUS (sum of MIC, AUX and FlexFX Return).



Send/Return Cable Wiring

Effects

Hardware and software control panels

These "soft" controls have multiple functions for controlling Serato Scratch LIVE software. These also control the Internal Digital Effects when the mixer is operated stand-alone without a computer. The Effects function the same way if connected to the Scratch LIVE software or when using the TTM 57SL stand-alone. Scratch LIVE software controls are described on page 36.

Scratch LIVE software effect controls mirror the TTM 57SL front panel.

When one status changes, so does the other.

Internal Digital Effects

There are two Effects Processors available in the TTM 57SL. Digital Effects hang out in the mixer instead of the software so they are available for signal processing even when Scratch LIVE is not running. Each processor can load one of ten effects:

- Echo [post fader]
- Hold Echo [post fader]
- HP Echo [post fader]
- HP Hold Echo [post fader]
- LP Filter (Low Pass) [pre fader]
- BP Filter (Band Pass) [pre fader]
- HP Filter (High Pass) [pre fader]
- Phaser [pre fader]
- Flanger [pre fader]
- Desecrator [pre fader]

When Scratch LIVE software is running, the deployed effect for each Effect Processor is on the computer screen, along with all control assignments and settings. The Effects are still available when the mixer is operating stand-alone, however, there is no display on the mixer for indicating the deployed Effect, control assignment or settings.

For this reason, you may want to begin by using the Effects with Scratch LIVE software to learn control assignments. Typically, Effects are controlled by ear. If you know which Effect is installed in the Effects Processors and what controls are assigned to what functions, the Effects are very usable without the software. The function of the controls has been standardized to help keep stand-alone operation simple. The TTM 57SL ships with Echo in Processor 1, and LP Filter in Processor 2 before Scratch LIVE reassigns them. *Note: these defaults can be changed and saved to the mixer with the Hardware Setup screen shown on page 32.*

Group 6

If you are connected to the Scratch LIVE software, switch to Group 6 to begin using Effects. Press GROUP then B6 (See page 36 for more information on Groups).

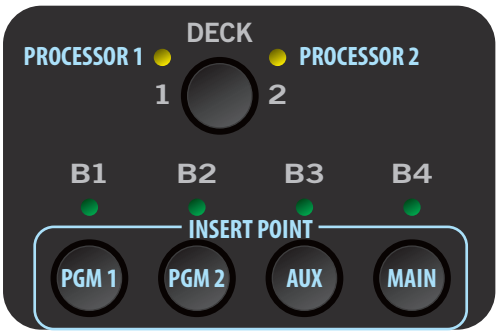
Inserting an Effect

There are four possible insert points for a deployed Effect: **PGM 1**, **PGM 2**, **AUX BUS** or **Main Mix**. When an Effects Processor is inserted in PGM 1 or PGM 2, pre- or post-fader operation is determined by the Effect. All the Echo Effects are post-fader, and all other Effects are pre-fader. Both Effects Processors can use the same insert point, but the order depends on the effect. For instance, the Filter effect will be processed first (because it is pre-fader), and the Echo effect will be processed second (because it is post-fader). If both are pre-fader Effects, Processor 1 will be first.

Note: Any Echo Effect can only be loaded into one of the processors.

The controls required to select an Effects Processor and determine it's insert point are shown below. The **DECK** button selects the Effects Processor to be controlled. Pressing the button toggles between Effects Processor 1 and Effects Processor 2.

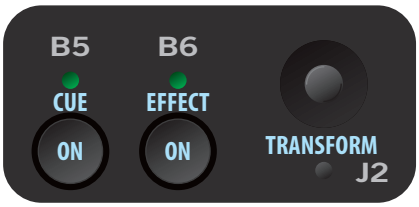
B1 inserts the selected Effects Processor in PGM 1.
B2 inserts the selected Effects Processor in PGM 2.
B3 inserts the selected Effects Processor in AUX Bus.
B4 inserts the selected Effects Processor in Main Mix.



To share an effect with both PGM 1 and PGM 2, insert the effect in the Aux Bus and use the FlexFX switches. Remember that an effect in the Aux Bus affects the FlexFX, Mic and Aux Inputs.

Basic Effects Controls

The selected effect is edited with the remaining soft controls. The function of some controls depends on the selected Effect. Specific control funtions are detailed for each Effect. The basic operation of these controls is outlined here:



B5 Toggles the Effects Cue On / Off. This is a global setting and does not change state when toggling between Effects Processors. See the Effects Cueing section to the right for details.

B6 toggles the selected Effects Processor On / Off.

J1 and **J2** joysticks may operate as transform switches or be used to control effects parameters. **J1** and **J2** each feature an eight-position joystick, a push switch and a green mode indicator light.

- If the indicator light is *off*, the associated joystick operates as a transform switch.
- If the green indicator light is *on*, the joystick is assigned to an effect parameter as shown on the following pages. Pressing the joystick toggles between the two modes of operation. If a second function is not available, pressing the joystick has no effect. See page 36 for a more detailed description of how to switch joystick modes.

P1 and **P2** may be used to control Effect parameters, each consisting of a rotary encoder, a push switch and a green mode light.

Footswitch

The last soft control is the optional footswitch. A footswitch allows hands-free control of these Effects parameters:

- Tap to set the BPM
- Turn the Effect on & off
- Select between the two Effects Processors (the DECK switch).

The footswitch can also assist with looping and recording functions. These are shown in the Groups section on pages 36 to 39. See page 48 for details on compatible footswitches.

Effects Cueing

You can cue an effect before you turn it on so that you can check how it sounds before you bring it into the mix. Button **B5** turns the Effect Cue on or off. Note that if you turn Effect Cue on, it stays on even when you switch between effects.

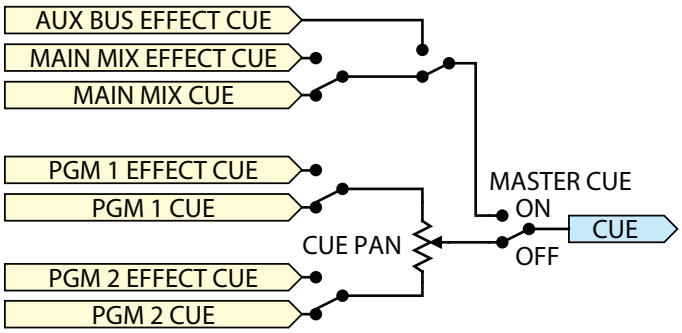
For an Effect Cue to be heard in the headphones, the Effect Processor must be selected, Effect Cue must be *on* and the Cue Pan and Master Cue controls must be in the correct position.

For instance, with a track playing in PGM 1:

1. Select Processor 1 to choose your Effect.
2. Select **B1** to route PGM 1 to the Effect.
3. Select **B5** to Cue the Effect in your phones.
4. Select **B6** to send the Effect to the Master.
5. Echo Effects are post-fader, so the fader needs to be up to send the Effect a signal. Other Effects do not rely on the fader.

The Effects Cue for an Effect inserted in Main or Aux Bus is only heard in the headphones if the Master Cue switch is *on*.

The Hold Echos are the only Effects that cannot be heard in the headphones unless it is *on* and also sent to the Master.



Effects Cue Logic Diagram

New Effects in 1.8

Phaser:

* Is a pre-fader effect
* P1 Controls the design frequency
* P1 second function taps the bpm as per the filter effects
* P2 Controls the feedback
* P2 second function controls the phaser depth

Flanger:

* Is a pre-fader effect
* P1 controls the base delay. This is in ms.
* P1 second function taps the bpm, bpm affects LFO sweep rate
* P2 controls feedback, providing fullness to the flanger effect
* P2 second function controls the depth which represents the peak delay change.

Desecrator:

* Is a pre-fader effect
* P1 controls the drive.
* P2 controls the down sampler.
* P2 second function controls the bit depth

HP Echo and HP Hold Echo:

* Hold Echo, with a high-pass filter added to remove the bass

LFO syncing - A single tap of the bpm button resyncs the LFO.

Control Assignments for Sweep Filter Effects

Three Filters have the same parameters, but are different filter types:

- LP Filter is an automatically sweepable Low Pass Filter.
- BP Filter is an automatically sweepable Band Pass Filter.
- HP Filter is an automatically sweepable High Pass Filter.

(In case you are wondering, a high pass is the same as a low cut.) Each Filter's settings are independent from the other Filters.

P1 Frequency / Tap BPM

If the track has a BPM tag, the Filter sweep automatically matches it and a lock icon appears in the Filter section. To manually set the sweep BPM, tap **P1** to the beat. The default BPM is 120, and tapping **P1** can set it from 24 to 480 with a resolution of 0.1 BPM. A single Tap of **P1** resyncs the sweep to the BPM.

The primary function of **P1** (indicator *off*) is Cutoff Frequency, which starts at 722 Hz and is adjustable from 31.5 Hz to 16 kHz (9 octaves). The full sweep of the filter is reached in 1⅓ rotations of **P1**.

J1 Multiplier

The BPM Multiplier is selected with **J1**, which toggles between transform operation and BPM multiplier. If the green mode indicator is *on*, **J1** may adjust the multiplier to 16, 8, 4, 2, 1, ¾, ½, or ¼.

P2 Resonance / Depth

Resonance is adjusted using the primary function of **P2** (indicator *off*). The diagrams below show the different resonances for each Filter type.

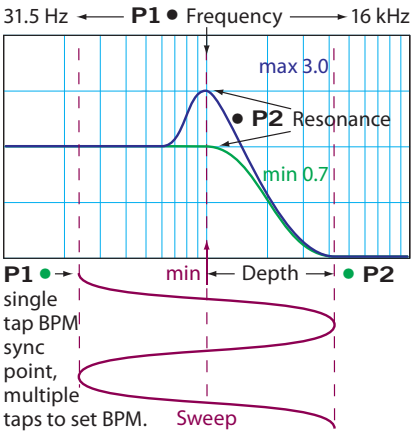
LP and HP Filter Resonance determines how peaked the cutoff is, which is adjustable over a range of 0.7 to 3.0.

BP Filter Resonance determines the width of the peak, which is adjustable over a range of 0.7 to 3.0.

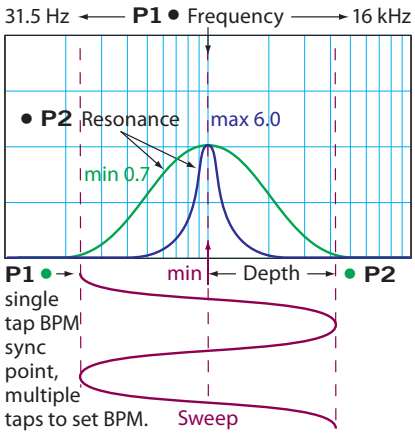
Depth is adjusted using the second function of **P2** (green indicator *on*). Depth sets how far the sweep of the LFO (low frequency oscillator) modulates the Frequency set by **P1**. The Depth is adjustable ±4.5 octaves. The full range is reached in 1⅓ rotations of P2. With Depth at minimum, the LFO ceases to have any effect, and P1 becomes a manual sweep control.

J2 Wet / Dry

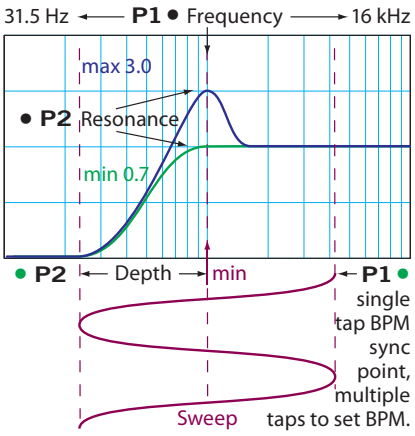
Pressing J2 toggles between transform operation (indicator *off*) and Wet / Dry control (green indicator *on*). The default is 100% wet. Holding the joystick left goes more Dry, to the right goes more Wet. Moving the joystick up provides instant, momentary 100% Wet. Moving the joystick down provides instant, momentary 100% Dry. This allows Wet or Dry transforming with the control returning to the set Wet/Dry ratio when the control is at rest (in the center).



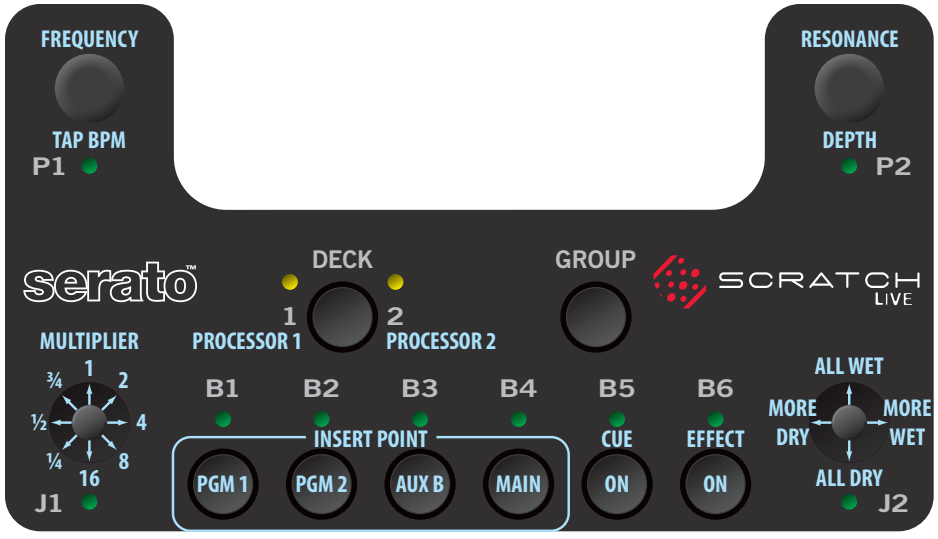
LP Filter Effect Response

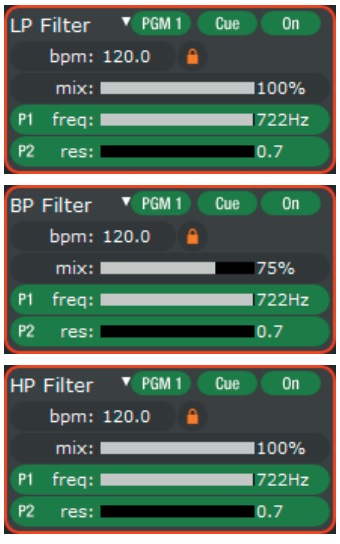


BP Filter Effect Response



HP Filter Effect Response





Control Assignments for Phaser & Flanger

Phasing is a swept comb-filter effect with no linear harmonic relationship between the comb teeth. Splitting an audio signal in two, shifting the phase of one signal by passing it through an all-pass filter, then recombining, creates the phasing effect.

A Flanger creates a unique "flyover"sound by creating a set of equally spaced notches in the the frequency spectrum in a linear harmonic comb filter. This is done by mixing a signal with a slightly delayed copy of itself and by constantly changing the length of the delay.

Both effects use an LFO to cause the comb peaks and notches to sweep up and down the frequency spectrum.

P1 Phaser Frequency / Flanger Delay / Tap BPM

The Phaser's primary function of **P1** (indicator *off*) is filter design frequency, which starts at 722 Hz and is adjustable from 31.5 Hz to 16 kHz (9 octaves). The full sweep of the filter is reached in 1⅓ rotations of **P1**.

The Flanger's primary function of **P1** (indicator *off*) is Base Delay, adjustable from 0 to 11.6 milliseconds. The Base Delay sets the high frequency point of the sweep. The Depth control (**P2**) sets the range of the swept comb filter.

If the track has a BPM tag, the sweep automatically matches it and a lock icon appears in the BPM section. To manually set the sweep BPM, tap **P1** to the beat. The default BPM is 120, and tapping **P1** can set it from 24 to 480 with a resolution of 0.1 BPM. A single Tap of **P1** resyncs the sweep to the BPM.

J1 Multiplier

The BPM Multiplier is selected with **J1**, toggling between transform operation and BPM multiplier. If the green mode indicator is *on*, **J1** may adjust the multiplier to 16, 8, 4, 2, 1, ¾, ½, or ¼.

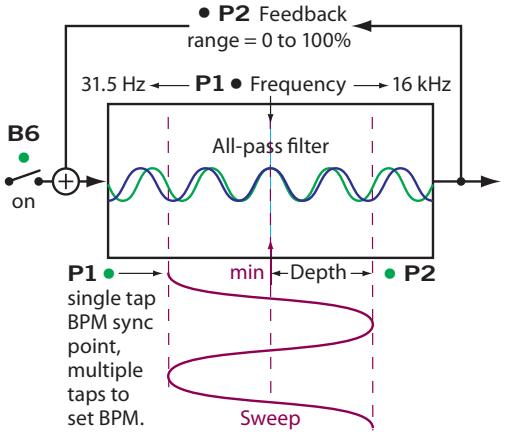
P2 Feedback / Depth

Feedback is the primary function of **P2** (indicator *off*) controlling the amount of phased or delayed signal fed back to the input, increasing "fatness." Minimum to maximum is 1⅓ rotations of **P2**.

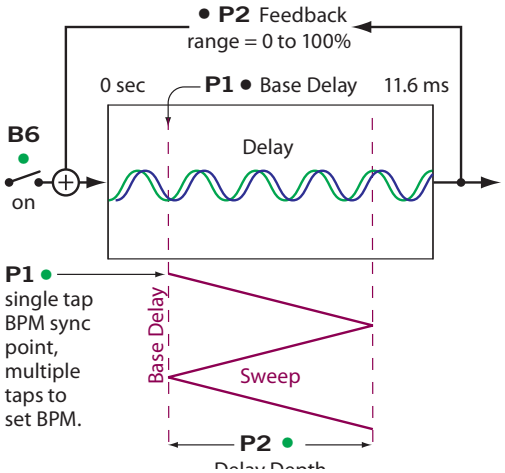
Depth is adjusted using the second function of **P2** (green indicator *on*). Depth sets how far the sweep of the LFO (low frequency oscillator) modulates the Frequency (Phaser) or Delay (Flanger) as set by **P1**. The Phaser Depth is adjustable from 0 to ±4.5 octaves, and the Delay Depth is adjustable from 0 to 11.6 ms. The full range is reached in 1⅓ rotations of **P2**. With Depth at minimum, the LFO ceases to have any effect, and **P1** becomes a manual sweep control.

J2 Wet / Dry Mix

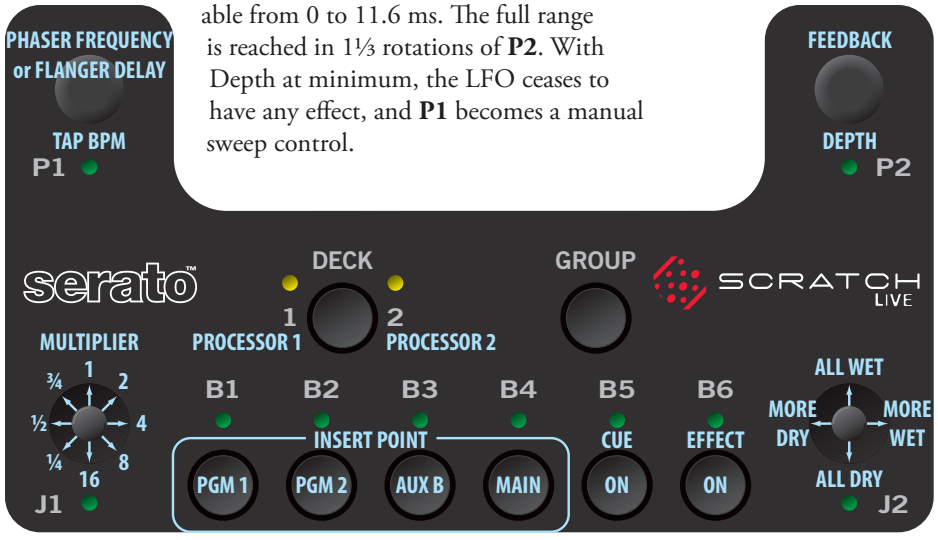
Pressing J2 toggles between transform operation (indicator *off*) and Wet / Dry control (green indicator *on*). The default is 100% wet. Holding the joystick left goes more Dry, to the right goes more Wet. Moving the joystick up provides instant, momentary 100% Wet. Moving the joystick down provides instant, momentary 100% Dry. This allows Wet or Dry transforming with the control returning to the set Wet/Dry ratio when the control is at rest (in the center).

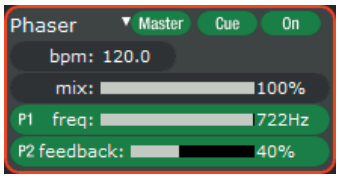


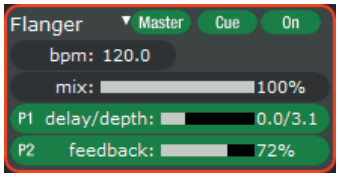
Phaser Effect Diagram



Flanger Effect Diagram







Control Assignments for Echo Effects

If the track has a BPM tag, the Echo BPM is automatically set and a lock icon appears in the Echo section. To manually set the BPM of the Echo, tap **P1** (or the footswitch) to the beat.

J1 Multiplier

Pressing **J1** toggles between normal transform operation (indicator *off*) and the BPM Multiplier (green indicator *on*). With the green indicator lit, **J1** adjusts the multiplier to 4, 2, 1, ¾, ½, ¼, ⅛, or 1⁄16. Multipliers that exceed the Delay memory will not function and are grayed-out in the software control panel. If BPM is set with tapping, the multiplier is set to 1. The multiplier is not reset when the BPM is set via the ID3 tag, so your subsequent tracks can stay at x4 if you wish. The active Multiplier is shown in green text when locked to a BPM.

P1 Delay / Tap BPM

Once you turn **P1**, the lock icon disappears, the Multiplier number turns white and **P1** becomes a Delay control. Delay has a range of 1ms to 2.9 seconds, and a track without a BPM tag will start at 500 ms. A slow turn gives 1ms adjustment resolution, while a fast turn increases the resolution to 200 ms per step. To get back to the original BPM after adjusting Delay, select a multiplier with **J1,** and the Multiplier number changes to green. A single Tap of **P1** will resync the delay to the BPM.

P2 Feedback

Feedback is the amount of delayed signal fed back to the delay input. Feedback minimum to maximum is 1⅓ rotations of **P2**. The Delay clears after one circulation when Feedback is brought to 0%. The Delay clears immediately when uninserted, but changing the insert point does not clear the feedback loop. This is useful for adding PGM 2 Echo to the fading PGM 1 Echo. To clear the loop and start a fresh Echo immediately, rapid double-click on the insert point B1, B2, B3 or B4.

Echo Effect Differences:

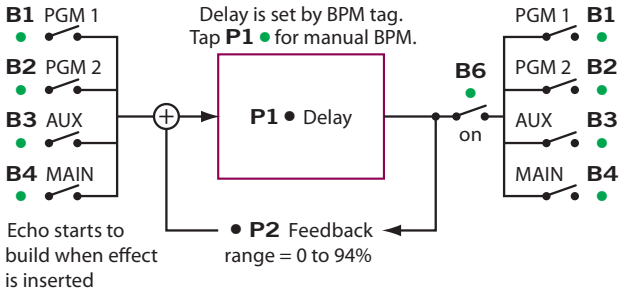
- Feedback starts at 70% and adjustable from 0% to 94%.
- Feedback generates as long as it is inserted.
- **P2** has no second function in the Echo Effect.

HP Echo Effect Differences:

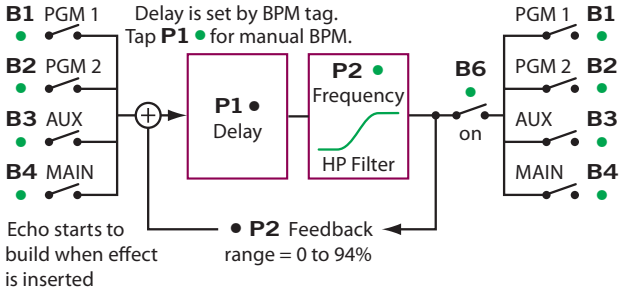
- Each delay cycle repeatedly runs through a second-order High Pass Filter having a set resonance of 0.7.
- Filter Cutoff Frequency is adjusted with the second function of **P2** (green indicator *on*), adjustable from 31.5 Hz to 16 kHz (9 octaves). The full sweep of the filter is reached in 1⅓ rotations.

J2 Wet / Dry

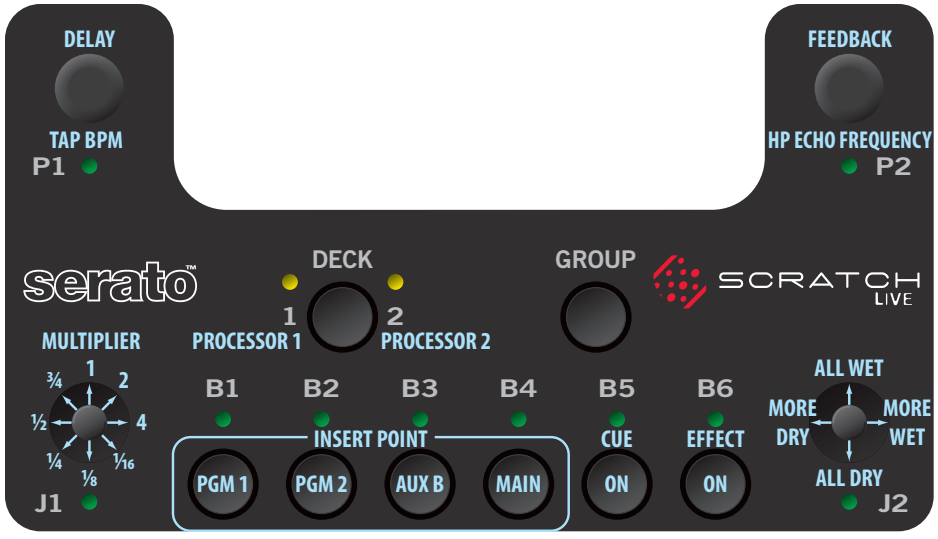
Pressing **J2** toggles between transform operation (indicator *off*) and Wet / Dry control (green indicator *on*). The default is 50% Wet / 50% Dry. Holding the joystick left goes more Dry, to the right goes more Wet. Moving the joystick up provides instant, momentary 100% Wet. Moving the joystick down provides instant, momentary 100% Dry. This allows Wet or Dry transforming with the control returning to the set Wet/Dry ratio when the control is at rest (in the center).

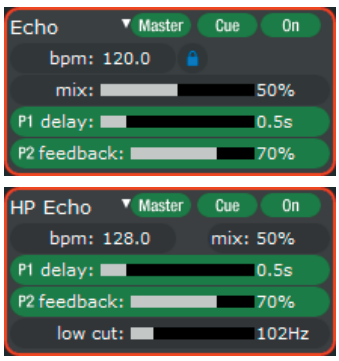


Echo Effect Signal Flow



HP Echo Effect Signal Flow





Control Assignments for Hold Echo Effects

If the track has a BPM tag, the Echo BPM is automatically set and a lock icon appears in the Echo section. To manually set the BPM of the Echo, tap **P1** (or the footswitch) to the beat.

J1 Multiplier

Pressing **J1** toggles between normal transform operation (indicator *off*) and the BPM Multiplier (green indicator *on*). With the green indicator lit, **J1** adjusts the multiplier to 4, 2, 1, ¾, ½, ¼, ⅛, or 1⁄16. Multipliers that exceed the Delay memory will not function and are grayed-out in the software control panel. If BPM is set with tapping, the multiplier is set to 1. The multiplier is not reset when the BPM is set via the ID3 tag, so your subsequent tracks can stay at x4 if you wish. The active Multiplier is shown in green text when locked to a BPM.

P1 Delay / Tap BPM

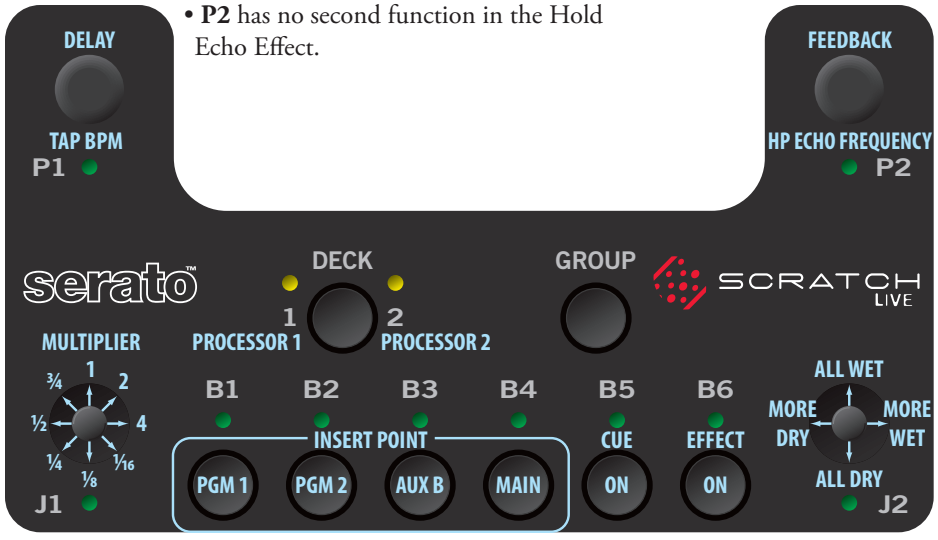
Once you turn **P1**, the lock icon disappears, the Multiplier number turns white and **P1** becomes a Delay control. Delay has a range of 1ms to 2.9 seconds, and a track without a BPM tag will start at 500 ms. A slow turn gives 1ms adjustment resolution, while a fast turn increases the resolution to 200 ms per step. To get back to the original BPM after adjusting Delay, select a multiplier with **J1,** and the Multiplier number changes to green. A single Tap of **P1** resyncs the delay to the BPM.

P2 Feedback

Feedback is the amount of delayed signal fed back to the delay input. Feedback minimum to maximum is 1⅓ rotations of **P2**. The Delay clears after one circulation when Feedback is brought to 0%. The Delay clears immediately when uninserted, but changing the insert point does not clear the feedback loop. This is useful for adding PGM 2 Echo to the fading PGM 1 Echo. To clear the loop and start a fresh Echo immediately, rapid double-click on the insert point B1, B2, B3 or B4.

Hold Echo Effect Differences:

- Feedback starts with 100% but adjustable to 0% with **P2**.
- Feedback generates as long as it is inserted *and* **B6** is *on*.
- Delay still loops after **B6** is *off*. If Feedback is set to 100% it will loop for days. The loop will decay if Feedback is reduced. Uninsert the Effect to stop the loop immediately.
- **P2** has no second function in the Hold Echo Effect.

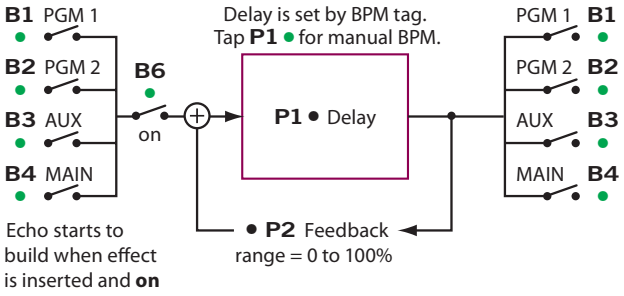


HP Hold Echo Effect Differences:

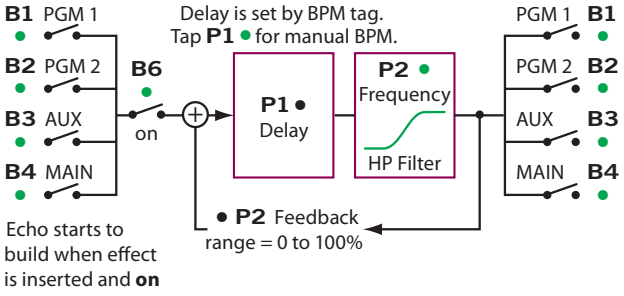
- Each delay cycle repeatedly runs through a second-order High Pass Filter having a set resonance of 0.7.
- Filter Cutoff Frequency is adjusted with the second function of **P2** (green indicator *on*), adjustable from 31.5 Hz to 16 kHz (9 octaves). The full sweep of the filter is reached in 1⅓ rotations.

J2 Wet / Dry

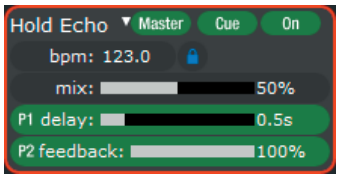
Pressing **J2** toggles between transform operation (indicator *off*) and Wet / Dry control (green indicator *on*). The default is 50% Wet / 50% Dry. Holding the joystick left goes more Dry, to the right goes more Wet. Moving the joystick up provides instant, momentary 100% Wet. Moving the joystick down provides instant, momentary 100% Dry. This allows Wet or Dry transforming with the control returning to the set Wet/Dry ratio when the control is at rest (in the center).

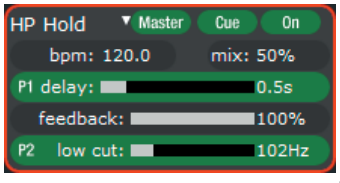


Hold Echo Effect Signal Flow



HP Hold Echo Effect Signal Flow





Control Assignments for Desecrator

The Desecrator adds controlled distortion...from fine dust to rusty metal spikes, by allowing adjustment of bit-depth and sample rate without dithering or anti-aliasing. Clipping can be a fine shave, or enough for a wig!

P1 Drive Level

The only function of **P1** (indicator *off*) is Drive Level, adjusting from 0 dB to +24 dB in 32 uniform steps. To keep audio output level constant, inverse gain is applied after the bit-depth stage. A slight level reduction occurs when clipping.

P1 has no second function when using the Desecrator.

J1 has no function when using the Desecrator.

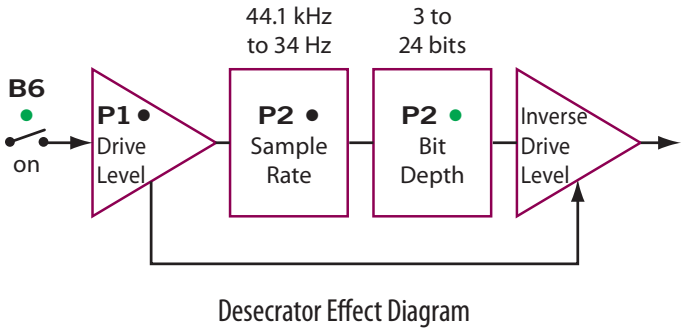
P2 Sample Rate / Bit Depth

Sample Rate is the primary function of **P2** (indicator *off*) adjusting the sample rate from a clean 44.1 kHz to a dirty 34 Hz over 32 steps with ⅓-octave spacing.

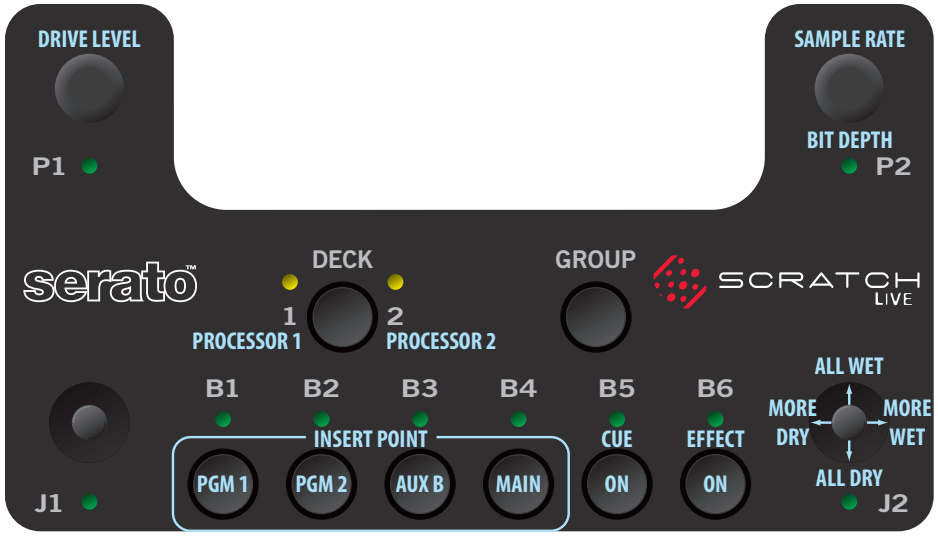
Bit Depth is adjusted with the second function of **P2** (green indicator *on*) adjusts from a creamy 24 bits to a crunchy 3 bits in 22 steps. Increasing the **P1** Drive Level increases the spreadability when bits are reduced to a single digit.

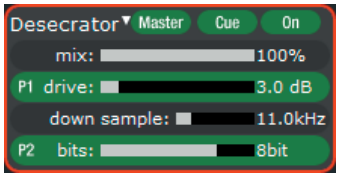
J2 Wet / Dry Mix

Pressing J2 toggles between transform operation (indicator *off*) and Wet / Dry control (green indicator *on*). The default is 100% wet. Holding the joystick left goes more Dry, to the right goes more Wet. Moving the joystick up provides instant, momentary 100% Wet. Moving the joystick down provides instant, momentary 100% Dry. This allows Wet or Dry transforming with the control returning to the set Wet/Dry ratio when the control is at rest (in the center).



Desecrator Effect Diagram





The Software:

Getting started

1) Install the software

Mac

Insert the Software Installation CD-ROM and double-click the installer icon.

Windows

1. Insert the Software Installation CD-ROM. If Setup doesn't start automatically, browse to the CD drive and run **setup.exe**. ***Note***: Select custom install to change the directory you wish to install Scratch LIVE into.
2. Follow the on-screen instructions. Once the installation is complete, Scratch Live appears in the Start Menu under All Programs > Serato > Scratch Live.

2) Connect the TTM 57SL mixer

Mac

Mac users need only connect the mixer after installing the software. No extra hardware installation is required.

Windows XP Drivers

There are two drivers to install. The first is the standard Windows driver that allows you to use your TTM 57SL as a sound card. The second driver allows you to use the TTM 57SL with Scratch LIVE.

When the TTM 57SL is connected to the computer with the USB cable for the first time, Windows will recognize it with 'Found New Hardware' bubbles appearing in the taskbar. Wait for it to finish as it loads the default sound card driver. When you see the bubble "Your new hardware is installed and ready to use," proceed to install the Scratch LIVE driver.

Vista Drivers

When you plug in your hardware:

1. A Found New Hardware wizard will pop up.
2. Choose "Locate and install driver software"
3. After Windows looks for the driver it will say "Windows couldn't find driver software for your device. Choose "Browse my computer for driver software"
4. Browse to the location that you extracted the ScratchLIVE .zip file to. Choose the Drivers folder.
5. Click next and Windows will say "Windows can't verify the publisher of this driver software". Click "Install this driver software anyway".
6. When you see the bubble "Your new hardware is installed and ready to use," proceed to install the Scratch LIVE driver.

Installing the Scratch LIVE driver.

1. With the Scratch LIVE installation CD in the drive, run Scratch LIVE.
2. Windows will ask you if you wish to search for drivers on the internet – select "No, not this time", and click "Next"
3. Choose the "Install the software automatically" option, and click "Next"
4. Windows may warn you that the driver has not been signed. Click "Continue Anyway"
5. Click Finish.

TTM 57SL as a sound card

The TTM 57SL will be available as a standard Windows sound card whenever Scratch LIVE is not running. It will replace the previous sound card and default to TTM57SL Line 2 (select **D 2** on either of the **PGM INPUTS**).

If you wish to change to Line 1 or back to your previous sound card when not using the TTM 57SL:

1. Start > Control Panel > Sounds and Audio Devices.
2. Click the Audio tab.
3. Make changes using the drop menus for both Sound Playback and Sound Recording.
4. Click OK.

Tip: Be aware that Windows system event sounds (beeps, dings, etc.) will come through your TTM 57SL when it is your sound card. To prevent embarrassment, have no other applications running. Better yet, turn off your computer's sound scheme:

1. Start > Control Panel > Sounds and Audio Devices.
2. Click the Sounds tab.
3. Under Sound scheme, change to No Sounds.
4. Click OK.

Setting up your turntables

1. Set the tone arms to the specific recommendations of the cartridge used, such that the needle never leaves the record, but not heavy enough that it heats up significantly. Both produce poor tracking.

2. If the track plays backwards, try swapping the left and right cables. The inputs from your turntables might be the wrong way around. Left=white, Right=red.

3. Grounding is extremely important when using Scratch LIVE. Make sure you have good connections from the ground wires of your turntables to the grounding post of your DJ mixer. All DJ mixers with turntable inputs have built in grounding points for this purpose. If you do not ground your turntables properly, the control signal will be noisy and the tracking of the record position will be erratic. (See **signal threshold** on the next page.

Tip: We recommend Shure M44-7 needles for use with Scratch LIVE, due to their high output volume, excellent tracking and low record wear.

Starting the software

Close all other programs on your Mac or PC. When you load Scratch LIVE for the first time, you will see the screen below.

Troubleshoot: The TTM 57SL mixer is not recognized

It takes five seconds for Scratch LIVE to detect the TTM 57SL. The mixer can be unplugged at any time; you do not need to exit Scratch LIVE before disconnecting the hardware. In some situations you might need to "wake up" your USB port by unplugging and re-plugging in the TTM 57SL for Scratch LIVE to recognize it. Use the supplied USB cable — longer lengths are not recommended. On some Windows machines each USB port is treated separately, so you will need to install the driver separately for each USB port.

Using tool tips

Click on the **?** icon to enable tool tips. Tool tips provide a handy way to learn the various features of Scratch LIVE. Move the mouse over a section of the screen to bring up a context-sensitive tool tip. Holding the mouse over the **?** button with tool tips turned on will show you a list of all keyboard shortcuts.

Tool tips are available in several languages. Scratch LIVE will display the tool tips in the language that your computer is set to. If your language is not available, the tool tips will be displayed in English.

Calibrating Scratch LIVE

The TTM 57SL interprets the signal on record and communicates with the software. The signal needs to be clear for Scratch LIVE to perform well. This section describes how to calibrate Scratch LIVE to optimize reading the control signal from your turntables or CD players.

For best results, re-calibrate Scratch LIVE each time you move or make changes to your DJ equipment. To calibrate Scratch LIVE, go to the **setup** screen by pressing the button at the top of the main screen, to the right of the Scratch LIVE logo.

Signal threshold

The first step is to set signal threshold. There is always a certain amount of background noise, particularly when using turntables in a club environment. With a normal turntable setup, this background noise is transmitted through the body of the turntable and platter to the stylus, and can cause stylus feedback. In Scratch LIVE, this can cause errors on the reading of the position and velocity of the control record, resulting in a garbled digital noise and/or poor tracking.

Place the needle on the record **with the record stopped**. Click the **estimate** button to measure the background noise and estimate the appropriate threshold. Moving the threshold slider to the left will make Scratch LIVE more sensitive to slow record movement, but also more sensitive to background noise.

Tip: If the slider jumps to the far right, then you have a problem with noise in your turntables/CD players/mixer. Check all your connections and make sure your equipment is well earthed. In some situations you will not be able to improve the signal quality, and you will have to play on regardless. In this situation, stick to ***relative*** *mode. (See page 23 for details)*

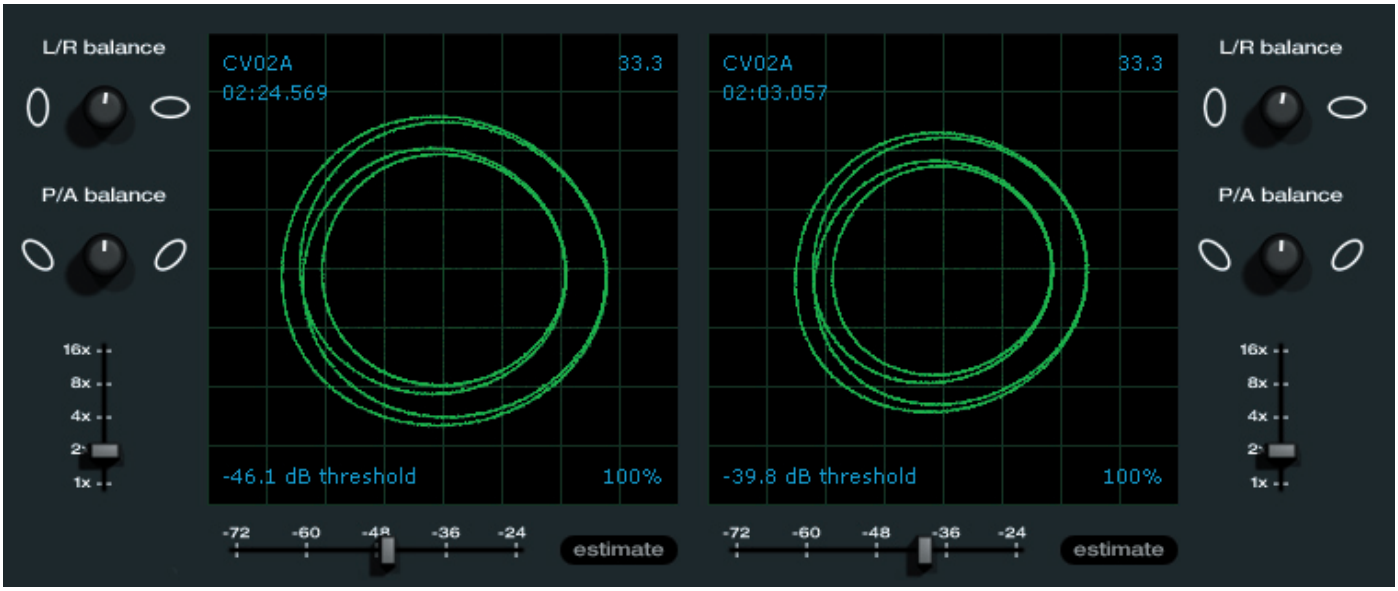
Scope view

Once you have set the threshold, start both turntables. You will see green rings appear in the scope view, as shown below.

For optimal performance the inner ring should be as close to circular as possible. Use the scope zoom slider (**1x** to **16x**) to zoom in or out as necessary. Use the scope **L/R balance** and **P/A balance** controls to adjust the shape of the inner ring.

The number in the top left corner of the scope view gives the current absolute position within the control record or CD. The number in the top right corner is the current speed in RPM. In the bottom left is the current threshold setting, and the number in the bottom right shows the percentage of readable signal – this number should be at least 85% when your system is calibrated properly.

Tip: If you have trouble getting the rings circular, you probably need to clean or change your needles. If the image appears as a line, then one of the channels of the turntable is not working. See examples of potential problems and fixes on pages 42-43.



Playing your first track

Now that you have calibrated Scratch LIVE, you are ready to play your first track. We will return to the **setup** screen later to set general system preferences.

When you first run Scratch LIVE, your library contains only the pre-installed tracks. Load files into Scratch LIVE by pressing the **import** button. Navigate the hard drive of your computer to locate your audio files. Click on these files (or folders containing files) and drag them onto the ✻ **All...** icon.

You can also import by dragging files and folders directly from Windows Explorer (PC version) or Finder (Mac version) into the Scratch LIVE library (see pic below).

Scratch LIVE supports importing M3U playlists.

Loading tracks

Click on the ✻ **All...** icon to show all the tracks in your library. To load a track on to one of the decks, drag the track from the track list on to either deck. You can drag the same track on to both decks to load it onto both turntables.

Tip: Use the keyboard shortcut **shift** ← *to load the highlighted track on to the left deck, and* **shift** → *to load the highlighted track on to the right deck.*

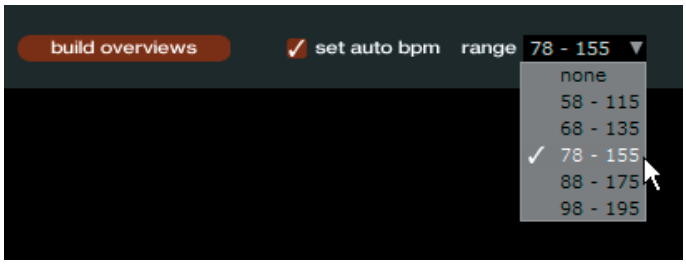
To start playing a track, simply put the needle on the record and start the turntable. The track will start playing from the position dictated by the placement of the needle on the record – if you place the needle at the beginning of the record, the track will start playing from the beginning. You can skip through the track by picking up the needle and placing it further into the record, just as with regular records (This is known as needle dropping).

Supported file types

Scratch LIVE supports fixed and variable bit rate .MP3, Ogg Vorbis, .AIFF, .AAC and .WAV file types. iTunes™ library and iTunes playlists can be automatically imported in the **setup** screen by clicking **read iTunes library**. See **Rescan 1D3 tags** on page 35.

NOTE: iTunes Music Store DRM-protected files are not able to be played back using Scratch LIVE.

Preparing your files



Build overviews

If you run Scratch LIVE with the hardware interface disconnected, you will notice a button labeled **build overviews** on the main screen. Click this to automatically build the overviews for all the tracks in your library. The track name (and location) are shown in the bar immediately below the button. When activated, three more bars appear. The first bar shows track reading progress, the second bar shows overview building, and the third bar shows track writing progress. This process prepares the overviews of all your tracks, and alerts you to any corrupt files you might have. These are indicated by **Status Icons,** shown on page 29.

Set auto BPM

If this option is checked, building overviews will include the estimated tempos of your files. If Scratch LIVE is confident that the auto BPM estimate for a file is accurate, it will be written to an ID3 tag in the file. The auto BPM function will not be applied if the track already contains BPM information. If you know your files BPM will fall within a certain range, use the range dropdown to avoid double or half value BPMs being calculated.

Note: As ***auto BPM*** *is part of the overview building process, files in your library with overviews already built will not be processed by clicking the* ***build overviews*** *button. To rebuild overviews and use auto BPM or auto gain on those files, drag them onto the* ***build overviews*** *button.*

Offline Player

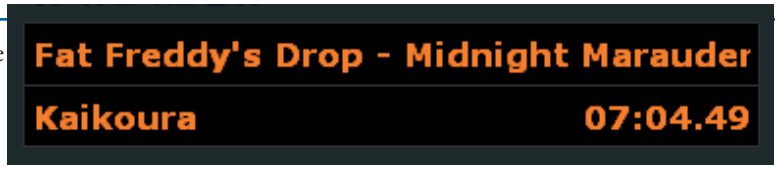
The offline player is available when Scratch LIVE hardware is not connected, and outputs through the current default audio device. Load a track to the offline player by dragging and dropping onto the deck, or pressing **shift** ←. If the end of the loaded track is reached, the next track in the current playlist is played automatically.

The offline player is a useful tool for preparing crates, auditioning tracks, and setting cue and loop points.

Note: for more information about cue points and looping, see page 25. For more information on crate organization, see page 27.

Playing tracks

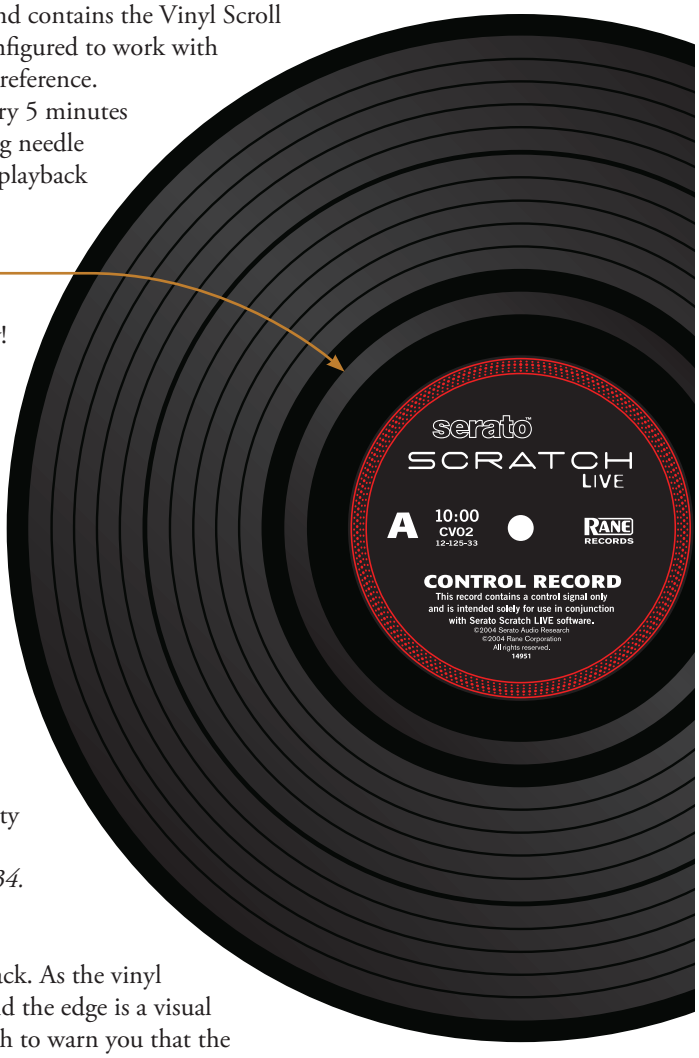
When a track is loaded, the track name, artist and length are displayed in the track title bar, and the Virtual Deck shows a solid black line. The track will start playing as soon as it detects the signal from the control vinyl (or CD).



The control record

The control record has two sides. The first side is 10 minutes long and contains the Vinyl Scroll section. The second side is 15 minutes long. Scratch LIVE can be configured to work with records playing at either 33 RPM or 45 RPM, depending on your preference.

The record has thin marks every minute, and a thicker mark every 5 minutes (when playing at 33 RPM). These marks are to assist you when using needle dropping to move through the track. These marks do not affect the playback of the track.



Vinyl Scroll

Vinyl Scroll allows you to select and load tracks using only your turntables (or CD player) – no contact with the computer necessary! To use Vinyl Scroll with turntables, lift the needle off the record and drop it into special "bonus track" section at the end of the record's **A** side. The movement of the control disk now controls the selected track within your library. Lift the needle out of the Vinyl Scroll section of the record and into the lead out (between the Vinyl Scroll area and the end of the record) to change crates or iTunes playlists. Go back to the Vinyl Scroll area of the record to choose a track within the crate or playlist. Once you have found the track you wish to play, put the needle back at the beginning of the record and it will load automatically.

This feature is available to CD users. Go to track **2** on the control CD to access Vinyl Scroll. Find the track you want to load, and go back to track **1**. The track you selected will be loaded and ready to play.

You can reverse the direction of Vinyl Scroll and set the sensitivity in the **setup** screen (page 28).

Tip: You can also use Vinyl Scroll in the prepare window. See page 34.

Virtual Deck

Virtual Deck shows everything about the speed and position of a track. As the vinyl rotates, so does the line on the label. The circular progress bar around the edge is a visual representation of the position within the song, and can be set to flash to warn you that the track is nearing its end. The time and remaining time are displayed in minutes and seconds. The turntable speed as a percentage pitch shift is shown on the left of the Virtual Deck, and the pitched BPM (BPM with pitch adjustment multiplier added) is shown on the right of the virtual Deck. If the track has no BPM information, pitched BPM will not be shown.

See page 22 for information on the **key lock** and **repeat** buttons.

If you are playing regular vinyl, notice that the Virtual Deck behaves strangely as Scratch LIVE attempts to decode the incoming signal. This will not cause any problems, but you may find it distracting. You can unload the currently loaded track using the **eject** button next to each Virtual Deck.

Tip: Use the keyboard shortcut shift-alt-arrow to unload a track from the Virtual Deck.

Eject button

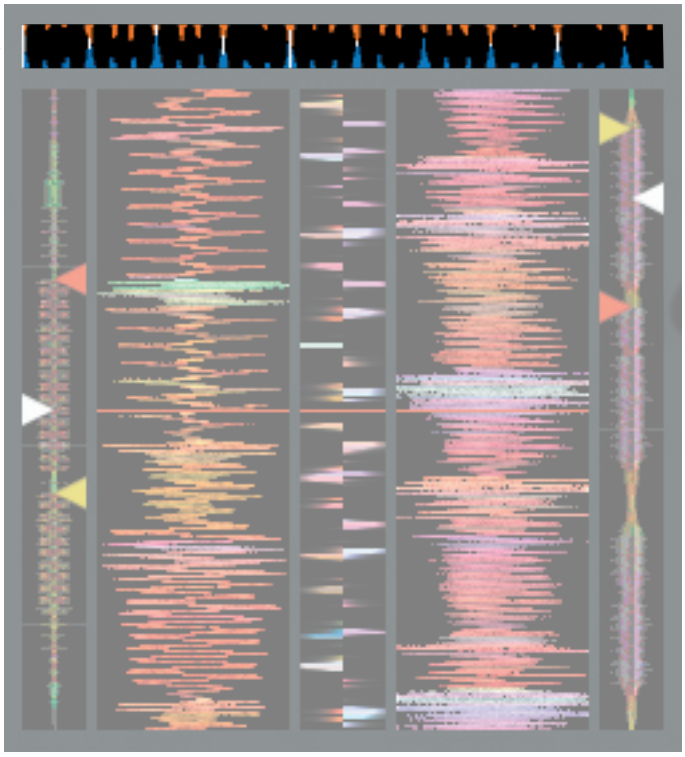
Visual aids

When the track is playing several waveforms are displayed. Each shows a different aspect of the track being played.

Tempo Matching display

The Tempo Matching display area provides a helpful tool for beat matching. Scratch LIVE detects the beats within the track, and places a row of orange peaks (for the track on the left side) above a row of blue peaks (for the track on the right side) in the Tempo Matching display area. When the two tracks are matched to the same tempo, the peaks will line up.

Note that the tempo display is aligned with the beginning of the bar, so the peaks keep their relative position as the track plays. This display does not show the relative timing of the beats, only the tempos of the tracks. The peaks will still line up when the tracks are playing at the same tempo, but are out of sync.



Track Overview display

This view provides a complete overview of the waveform of the track, and includes a marker to show the current position within the track.

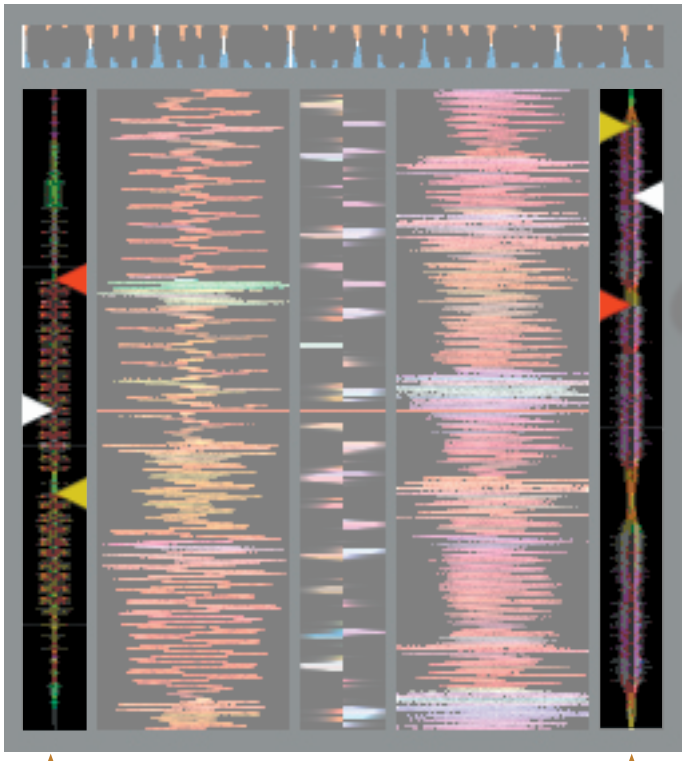
This view is useful for finding transitions within the track. The waveform is colored according to the spectrum of the sound – red representing low frequency bass sounds, green representing mid frequency sounds and blue representing high frequency treble sounds.

You can jump to different positions within the track by clicking on the Track Overview display (disabled in **absolute** mode).

Grey lines behind the overview show the length of the track – a thin grey line every minute, and a thick grey line every 5 minutes.

The overview will be filled when you load the track onto a Virtual Deck. On slower computers, you should disable **auto fill overviews** in the **setup** screen – with this setting disabled, the overview will be filled as you play the track.

See also: **Cue points** on page 25
Absolute mode on page 23
Build overviews on page 18



Main Waveform display

This view provides a close-up view of the track, including color-coding to show the frequency of the sound; red representing low-frequency bass sounds, green representing mid-frequency sounds and blue representing high-frequency treble sounds.

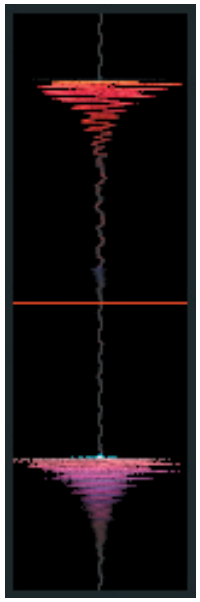
You can also switch to a three-band spectrum view by holding the ***crtl*** key and clicking on the waveform.

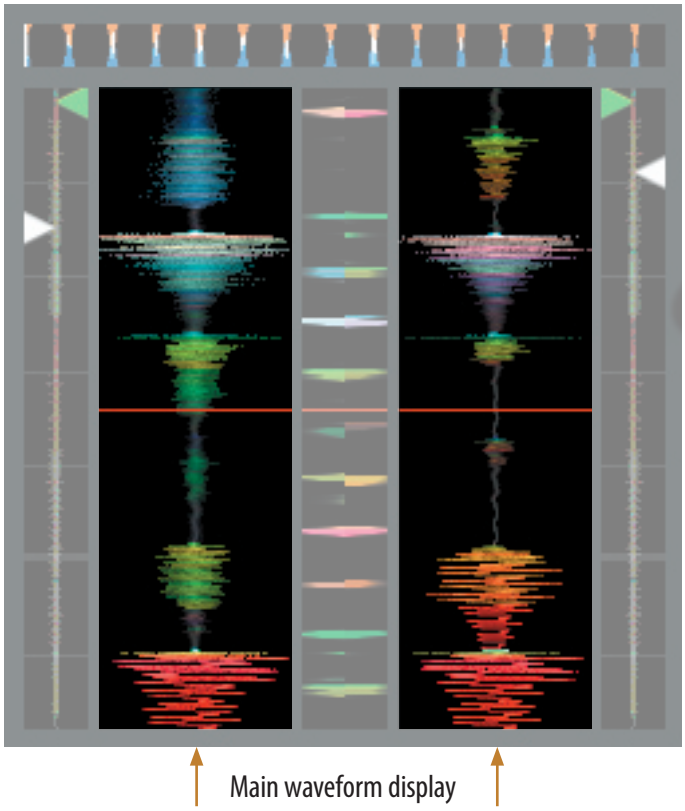
Click on the waveform to 'scrub' or make fine adjustments to your position within the track. This applies to **internal** mode only, and may be useful if you wish to set cue points in your tracks without turntables or CD players connected. The Main Waveform is zoomed around the current position in the track.

See also: **Internal mode** on page 24.
Cue points on page 25.

Tip: Use the + and – keys to zoom in and out.

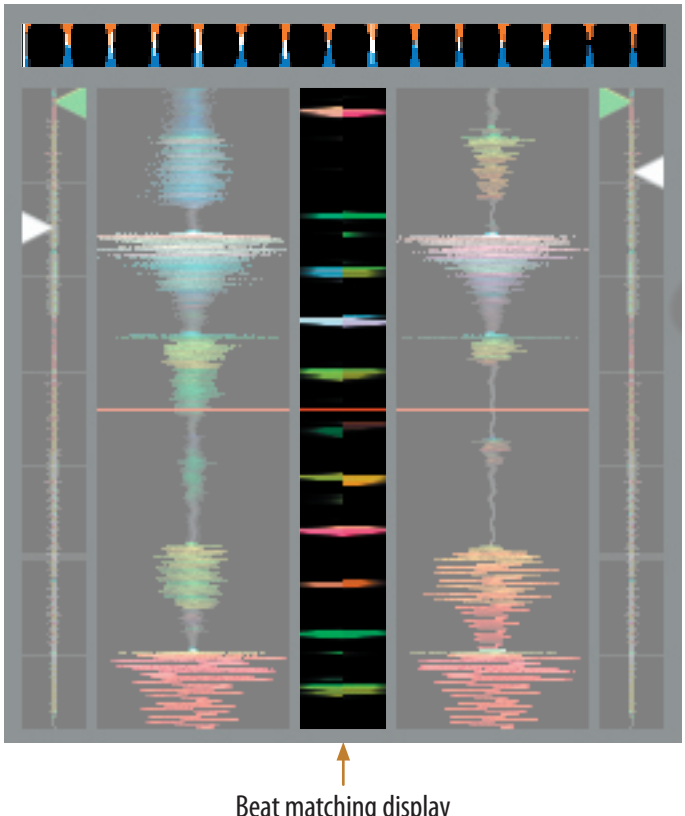
In the example below, the red part of the wave represents a kick drum, while the purple part represents a snare drum.





Beat Matching display

This view shows the position of beats within the track. When beat matching, this view helps align the downbeats of the two tracks. The markers are matched up when the two tracks are beat matched.



Example

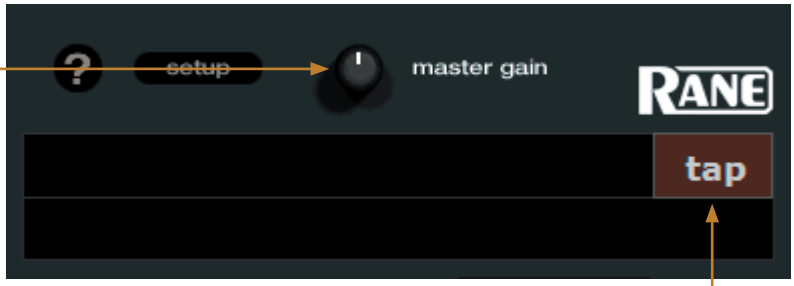
The following is a demonstration of using the visual aids to help beat match. In this example, the track that is playing is on the left deck, and the track to be mixed in is on the right deck.

1. Start the track playing on the right deck. After a few seconds, blue peaks appear in the **Tempo Matching** display.
2. Adjust the pitch of the right turntable until the blue peaks sit under the orange peaks in the **Tempo Matching** display. Once they are aligned, the two tracks have the same tempo.
3. Next align the markers in the **Beat Matching** display. Watch the color of the items passing by in the **Main Waveform** display. Remember that a kick or bass drum will be red in color, and a snare drum will be green or blue.

This technique will by no means guarantee perfect mixes, but may help to speed up the process of beat matching.

Master gain

The master output of Scratch LIVE can be controlled using the **master gain** control. This adjusts the output volume of all tracks played. ***Note: for best results, set the master gain to the 12 o'clock position, and adjust the volume of individual tracks using the track gain*** *adjustment.*



Tap Tempo

For tracks with no BPM information, there is a tap tempo button displayed where the BPM usually is, in the song info area. There is also an **auto BPM** feature described on page 18.

Pressing alt-space bar activates the tempo tapper (press alt-space bar a second time to activate the tempo tapper on the right Virtual Deck). Tap the space bar along with the beat.

After you've tapped the first beat, you can switch to double time tapping, half time, start of each bar etc. The range is set by the first two taps, after that you can switch to any steady rhythm you feel comfortable with – quarter notes, half note, whole notes. Esc resets the BPM, Enter saves the BPM to the track. You can use the mouse if you prefer.

Your CD player or turntable's pitch slider doesn't need to be at zero, we do the math for you. You can also use the tempo tapper when no song is loaded, for finding the BPM of regular records, for example.

Tracking indicator

The tracking indicators on the main screen show the quality of the signal coming from the control record or CD. The length of the bar indicates the speed of the record or CD. The color indicates the amount of position information Scratch LIVE is receiving. When you are playing the record at normal speed, the tracking indicator should be grey. If it is mostly red there is a problem reading the control signal. Make sure your needles are clean, and check the calibration in the **setup** screen. ***Note: it is normal for the light to be red when cueing or scratching.***

Key Lock

When Key Lock is on, the key or pitch of the song stays locked at what it would be if the track was playing at normal speed, regardless of the platter speed of the turntable or CD player. Key Lock has scratch detection, so that it automatically turns off when scratching for a natural scratching sound. Turn Key Lock on or off by pressing the button to the top right of the Virtual Deck.

Tip: F5 and F10 will turn Key Lock on and off for the left and right decks respectively.

33 / 45 Speeds

Set this to match the speed of your turntable for normal playback.

Repeat

Use the repeat function to repeat the song across the entire length of the control record.

Tip: Short "loop" samples can be turned into a continuous track using the repeat function. The loops must be less than 10 seconds long, and cut at the start and end of a bar.

Autoplay

Click the **auto** button to enable autoplay. With this setting turned on, when one track finishes playing, the next track starts automatically. Load from a crate to play through the songs in that crate, or from your library to play through your library. Use the next ▶▶| and previous |◀◀ buttons to jump to the next track or go to the previous track in the list. Autoplay works in both **relative** and **internal** modes. **Play from start** must be checked in the **setup** screen for autoplay to work correctly. See page 33.

Track gain

Use the track gain adjustment to balance the volume of the tracks in your library. Any adjustment made to the gain of a track is saved with the file, and will be reapplied to the entire track when it is loaded again.

The level meter shows the level sent to the hardware interface — after both individual track gain and master gain adjustment.

Note: for automatic gain setting of your tracks, see Use auto gain on page 29.

Scratch LIVE modes

Scratch LIVE has three different modes of operation. You can switch between these modes by clicking the mode buttons near the Virtual Deck.

Absolute mode

Abs mode is the default mode, and most closely resembles the properties of normal vinyl. The beginning of the track is mapped to the start of the record, and by picking up the tone arm and moving the needle to another part of the record (needle dropping) you can move to a different position within the track.

Absolute mode faithfully reproduces the movement of vinyl control records, including stops, starts, scratching, needle dropping, rubbing and other turntablist techniques.

When you reach the end of the record, Scratch LIVE automatically switches to **internal** mode. This is known as Emergency Internal mode, and prevents long tracks from stopping when you run out of record. You can switch from Emergency Internal mode to **relative** mode by lifting the needle and placing it in the lead-in of the control record. Emergency **internal** mode will activate after 1 second.

Note: Be careful when scratching near the end of the record not to accidentally go past this point and into* internal *mode – the track will no longer respond to record movement!

Tip: Use the keyboard shortcut F1 (left deck) or F6 (right deck) to switch to absolute mode.

Relative mode

Rel mode observes the relative forward and backward movement of the record, but does not take into account the position within the record. **Relative** mode disables needle dropping, but allows skip-free scratching.

Relative mode adds additional speed controls:

◀◀◀ **Rewind** – The rewind function speeds up the longer you press the button.

◀◀ **Bend down** – Create a temporary decrease in the playback speed. Use bend down if the two tracks are in time, but this track is slightly ahead of the other track.

▶▶ **Bend up** – Create a temporary increase in the playback speed. Use bend up if the two tracks are in time, but this track is slightly behind the other track.

▶▶▶ **Fast forward** – The fast forward function speeds up the longer you hold the button.

◀▸ **Censor** – see description ☛

When you reach the end of the record, Scratch LIVE automatically switches to **internal** mode. This is known as Emergency Internal mode, and prevents long tracks from stopping when you run out of record. You can switch from Emergency Internal mode back to relative mode by lifting the needle and placing it back at the beginning of the control record.

Tip: Use the keyboard shortcut F2 (left deck) or F7 (right deck) to switch to relative mode.

Tip: If you wish to change the orientation of the sticker on your control vinyl, lift the needle, turn the control vinyl, and drop the needle more than 1 minute from where you picked it up.

Censor

Use the censor button to 'mask' parts of a song, or use as a special effect. When you press the censor button, the track starts playing backwards from that point. When you release the censor button, the track plays forward from the point you would have been, had you not pressed the censor button. Censor is available only in **relative** and **internal** modes.

Internal mode

Int mode allows you to play tracks without external vinyl (or CD player) control. **Internal** mode has a start / stop function and virtual pitch slider. Holding down the **shift** key moves the pitch slider slowly. Holding the **ctrl** key and clicking on the **pitch slider** resets it to 33 rpm or 45 rpm, depending on which you are closest to at the time.

Scratch LIVE automatically switches to **internal** mode when the end of the control record is reached; you can switch back to **absolute** mode by placing the needle in the lead-in of the control record.

If you switch from **absolute** or **relative** into **internal** mode, Scratch LIVE automatically adjusts pitch to maintain playback speed as set by the turntable.

Internal mode adds these additional controls:

◀◀◀ **Rewind** – The rewind function speeds up the longer you press the button.

◀◀ **Bend down** – Create a temporary decrease in the playback speed. Use bend down if the two tracks are in time, but this track is slightly ahead of the other track.

◀ **Play / pause reverse** – Press to play, press again to stop playback. You can adjust the **braking** knob in the **setup** screen to range from an immediate stop to a slow turntable-style 'power down'. See page 33.

▶ **Play / pause forward** – Press to play, press again to stop playback. Uses the same **braking** as described above.

▶▶ **Bend up** – Create a temporary increase in the playback speed. Use bend up if the two tracks are in time, but this track is slightly behind the other track.

▶▶▶ **Fast forward** – The fast forward function speeds up the longer you hold the button.

Scratch LIVE has two pitch sliders – a large slider for coarse pitch adjustment, and a small pitch slider for fine adjustments. Click above or below the handle on the large pitch slider to make small pitch adjustments, or hold the shift key and drag the pitch slider to move it slowly. Drag the center of the small pitch slider to make fine pitch adjustments, or click on either side of the small slider to pitch bend.

There is a temporary cue point that can be used like the Cue button on many DJ CD players. Press ctrl-I to set this temporary cue point on the left deck, and ctrl-K to set it on the right deck. This temp cue point is shown in the main waveform as a white marker. This cue point is not saved with the track, and by default is set to the beginning of the track. Press **I** to jump to this temporary cue point on the left deck, and K for the right deck. If you hold down the **I** or K key while the track is stopped, it will play from the temp cue point. As soon as you release the key, it will jump back to the temp cue point. Note that you can use this shortcut to jump the beginning of the track if the temporary cue point has not been set. See **Cue points** on the next page.

The buttons above the small pitch slider allow you to seed the base playback speed – **1/2** (half speed), **33/45** or the speed of a 45 rpm recording playing at 33 rpm, **1x** or normal speed, **45/33** or the speed of a 33 rpm recording playing at 45 rpm, or **2x** (double speed).

You can also control playback using the computer keyboard – turn Caps Lock on to enable.

Left Deck	Function	Right Deck
Q	play / pause reverse	A
W	play / pause forward	S
E	pitch down	D
R	pitch up	F
T	bend down	G
Y	bend up	H
Alt-Q	load previous track	Alt-A
Alt-W	load next track	Alt-S
Alt-E	rewind	Alt-D
Alt-R	fast forward	Alt-F
Ctrl-I	set temporary cue point	Ctrl-K

Click on the waveform to 'scrub' or make fine adjustments to your position within the track. This may be useful if you wish to set cue points in your tracks, and don't have your turntables or CD players connected.

Note: If you play a track in internal mode, and then switch to absolute or relative mode, the pitch adjustment will be dictated by the turntable, so there will be a jump in pitch unless they are already perfectly matched.

Tip: Use the keyboard shortcut F3 (left deck) or F8 (right deck) to switch to internal mode.

Tip: Panic! If you are in absolute or relative mode and you get a build up of dust on the needle that is breaking up the audio, hold down ctrl and press the **int** *button. This takes you to internal mode, and resets the pitch to zero.*

The stripe grows a fifth by each rotation closer to the cue point

The stripe is a solid color at the cue point

Cue points

You can set up to five visual cue points within each track. Use the **+** button to place a cue point.

Click the arrow to the left of each cue point to jump to it (**relative** and **internal** mode only). You can also jump to cue points using keyboard shortcuts – 1 through 5 for the cue points on the left deck, and 6 through 0 for the right deck cue points.

Notice that the stripe on the Virtual Deck jumps to the 12 o'clock position and changes color when you set a cue point – you are at the cue point when the stripe is one solid color and at the 12 o'clock position.

As the record plays on beyond the position of the cue point, the colored bar will shorten by a fifth for each rotation. Likewise, as you approach the cue point, the color will grow by a fifth each rotation. For example, the picture below right shows the record just before the end of the 5th rotation before the cue point.

Each cue point can have a different color. To change the color of a cue point, click on the colored square and choose a new color from the drop down menu.

To remove a cue point, use the **x** button on the right side of the cue point panel.

A cue point can occupy any of the 5 slots. You can drag and drop cue points to change their order in the list. If you wish to have the cue points sorted chronologically, check the **sort cues chronologically** option in the **setup** screen. If you load the same track on to both decks, you will be able to add or modify cue points from either deck.

When you jump to a cue point in internal mode while paused, the track will play from the cue point for as long as the key or mouse button is pressed, after which the playhead returns to the cue point. If this is done using the keyboard while the track is playing in either internal or relative mode, the cue point will be repeatedly triggered, producing a stuttering effect.

Tip: The rate of cue point stuttering is controlled by your operating system keyboard repeat rate settings. Windows users: Keyboard properties are in the Control Panel. Mac users: Keyboard and Mouse are in System Preferences.

Tip: use the keyboard shortcuts ctrl*-comma (for left deck) and* ctrl*-dot (for right deck) to place cue points.*

Looping

You can save up to 9 loops per track; these loops are saved in the file, and will be present when you reload the track. To make a loop, set the in-point by clicking the **in** button, and the out-point by clicking the **out** button. To turn the loop on or off, click the **loop** button. If you want the playhead to jump to the start of the loop when you enable the loop, hold the control key and press the **loop** button.

To adjust the in-point of the loop, click the **in** button. You can use the arrow keys: ← to move the in-point towards the start of the track, → to move the in-point towards the end of the track. Hold down the shift key while pressing the arrow key to make coarse adjustments. Click the **in** button again to save the in-point. The same applies to adjusting the out-point.

You can also use the control vinyl (or CD) to adjust the in- and out-point. Click the **in** button, then move the control vinyl. Moving the vinyl will adjust the in-point. Once you are happy with the new in-point, click the **in** button to save, and release the control vinyl. The control vinyl will go back to controlling playback once the record is back up to normal speed. Using the control vinyl to adjust loop end points is optional – to turn this feature off, disable the **adjust loops with vinyl** option in the **setup** screen.

There are 9 available loop slots per track. If a loop is set in a given slot, the background (behind the loop number) will be green. Press the **x** button to clear the loop. If you click on the number of a occupied loop slot, a red border will appear. This indicates the loop is locked, and you will not be able to adjust the end points or delete the loop until you unlock it, by clicking on the number again.

Looping applies to **relative** and **internal** modes.

Auto-looping

Auto looping allows you to create loops that will automatically be in time with the music in tracks that Scratch LIVE knows the BPM of. When you press an auto loop button, a loop is created of the beat value selected. The loop is snapped to the beats in the song detected by Scratch LIVE so even if when you press the button slightly out of time Scratch LIVE will still create a perfect loop for you.

Five auto-loop buttons are available on screen at any one time. They range from ⅛ to 32 beats. The user can select the autoloop range with the ◀ and ▶ buttons.

Auto-looping buttons require the track BPM to be set to work. See Set auto BPM on page 18.

Pressing auto-loop for *n* beats will create a loop start point from the nearest beat to the playhead (within reason), and set a loop endpoint *n* beats in the future. Pressing auto-loop **1** while auto-loop **1** is active will deactivate the loop. Pressing a different auto-loop button while looping is active will extend the endpoint of the current loop to the appropriate new auto-loop length.

You can also save an auto-loop to the next available slot.

When using an auto-loop, a save button is visible where the lock loop button normally is.

The A - Slot

A special loop slot 'A' exits for auto-looping. The act of using the auto-loop buttons sets a loop in the 'A' slot, following the rules above. Turning a loop off using the auto-loop buttons returns you to the loop slot that you were previously in at the time you started auto-looping. Turning the loop off using the 'loop' button leaves you in the 'A' slot. The 'A' slot is not saved to disk automatically – pressing '**save**' saves the loop to the first empty slot in 1-9.

Auto-looping shortcut keys are alt-1 to 5 for the left deck, and alt-6 to 9 for the right deck. They correspond to the looping buttons as laid out on screen: ie., if the onscreen buttons display **1 2 4 8 16** beat loops, alt-1 triggers a 1 beat loop, and alt-5 triggers a 16 beat loop.

MIDI Control

Overview

The MIDI Control feature in Scratch LIVE provides the ability to map MIDI controls to Scratch LIVE controls, and thus control the functions of Scratch LIVE using MIDI controllers such as keyboards, triggers, sliders, and knobs.

Integrating MIDI controllers into your Scratch LIVE setup can improve live performance usability, such as hitting pads on a MIDI controller to trigger loops and cue points.

MIDI controller setup

The process of setting up a MIDI controller for use with Scratch LIVE will vary depending on the hardware in question. Many devices can connect to a computer using MIDI over USB, and will either be supported directly by your operating system, or require installation of drivers and configuration utility software. Follow the manufacturers instructions for installation.

Other controllers may solely use a MIDI OUT connector to send control messages, and will require a separate MIDI interface unit to communicate to software. Generally the MIDI interface will come with drivers and configuration tools which pass your controllers output onto an available MIDI channel, which can be used by Scratch LIVE.

Once your controller is installed and functioning correctly, use the directions for assigning controls below.

Assigning Controls

To enable MIDI assign mode, click the MIDI button midi or press ctrl+M.

Hovering the mouse pointer over a control will bring up the MIDI assignment box, showing the current assignment status.

To assign a MIDI control, click on the control in Scratch LIVE, then move the MIDI control. The MIDI assignment box updates to show it has mapped the controls to one-another.

To un-assign a MIDI control, click on the control in Scratch LIVE, and press return on your computer keyboard.

Note: Once in MIDI assign mode, Scratch LIVE controls will no longer respond directly to the mouse—if you need to change a control using the mouse, disable MIDI assign mode.

While in MIDI assign mode, controls which have MIDI inputs assigned show a green box indicator around them.

MIDI platters

The Scratch LIVE virtual decks are not assignable to MIDI control. MIDI devices with platters on them all send different data so user mapping is not possible. Support for specific MIDI devices with platters on them will be introduced in Scratch LIVE 1.8.1.

Note: If you have a MIDI controller designed for DJing which includes platter controls, assigning them to the Scratch LIVE decks may be possible by installing a custom preset ***.xml*** *file. Visit the Scratch LIVE forums to discuss your controller with other users, and for information regarding writing and trading user presets.*

Assigning MIDI to other controls

Controls which aren't normally visible are available for assignment in the lower part of the screen when in MIDI assign mode. These include library navigation controls and the temporary cue points for either deck.

Assigning Ctrl-Click Functionality

Some Scratch LIVE screen controls have additional functionality assigned to ctrl-click. You can assign ctrl-click functionality to a MIDI control, alongside the normal functionality.

For example, ctrl-click on the internal mode pitch slider returns pitch to zero. To assign this to MIDI control, enter MIDI assign mode, ctrl-click on the slider, and then assign one of the pads to it. When you press the pad, the pitch goes to 0.

Presets

MIDI presets are accessible in the MIDI panel of the setup screen. By default the current MIDI assignments in Scratch LIVE are automatically remembered and loaded the next time you start the program. The preset screen allows you to save and recall several different MIDI setups. This is useful if you are using several MIDI devices or want to quickly switch MIDI setups without having to re-assign all your controls.

MIDI implementation

Scratch LIVE MIDI Control only supports:

- Note On/Off
- Control Changes (standard 7-bit and 14-bit CC)
- RPN/NRPN (14-bit).

Organizing your music

Scratch LIVE can support an unlimited number of tracks – the only limitation is the size of the hard drive of your computer. A number of features are included to help you to keep your music organized and find songs quickly and easily.

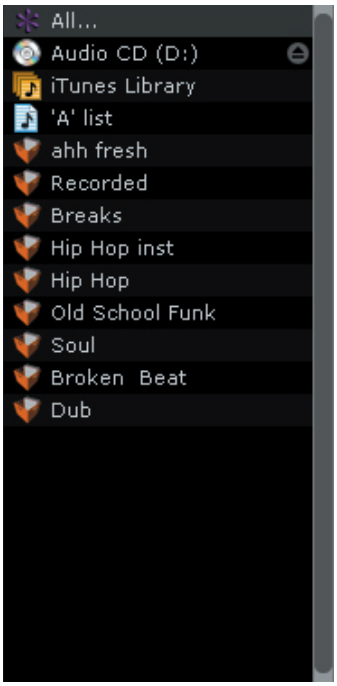
Grouping tracks into crates

Scratch LIVE supports several ways of organizing and sorting your file library. iTunes™ users will notice that Scratch LIVE automatically incorporates your existing iTunes library and playlists.

Scratch LIVE uses digital "crates" for quick access to your favorite collections. There is no limit to the number of crates you can create, and any given track can be placed in multiple crates. For example, you could organize your files into the following crates, where any one track would be filed in more than one crate:

- Hip Hop
- UK Hip Hop
- French Hip Hop
- Instrumental Hip Hop
- Old School Hip Hop
- Hip Hop LPs

To make a new crate, click the **+** button. To rename a crate, double click the crate name.



You can change the order of tracks within a crate by dragging them up or down.

Tip: The ***protect library*** *option in the* ***setup*** *screen applies to removing, editing and renaming crates. Check this option to prevent changes to your crates. If you do delete a crate by accident, you can get it back from the recycle bin / trash. Crate files have the extension .crate.*

Subcrates

You can drag and drop crates into other crates to make subcrates. If you drag a crate to the very left of the crate panel, it will stay in the top level of the crate structure. If you drag the crate a little to the right, onto the name of another crate, it will make the crate you are dragging a sub crate of the first crate.

Sorting your files

The track information display area can be customized to display the columns listed below:

- added
- album
- artist
- bitrate
- BPM
- comment
- composer
- filename
- genre
- grouping
- label
- length
- location
- remixer
- sampling rate
- size
- track
- video track
- year

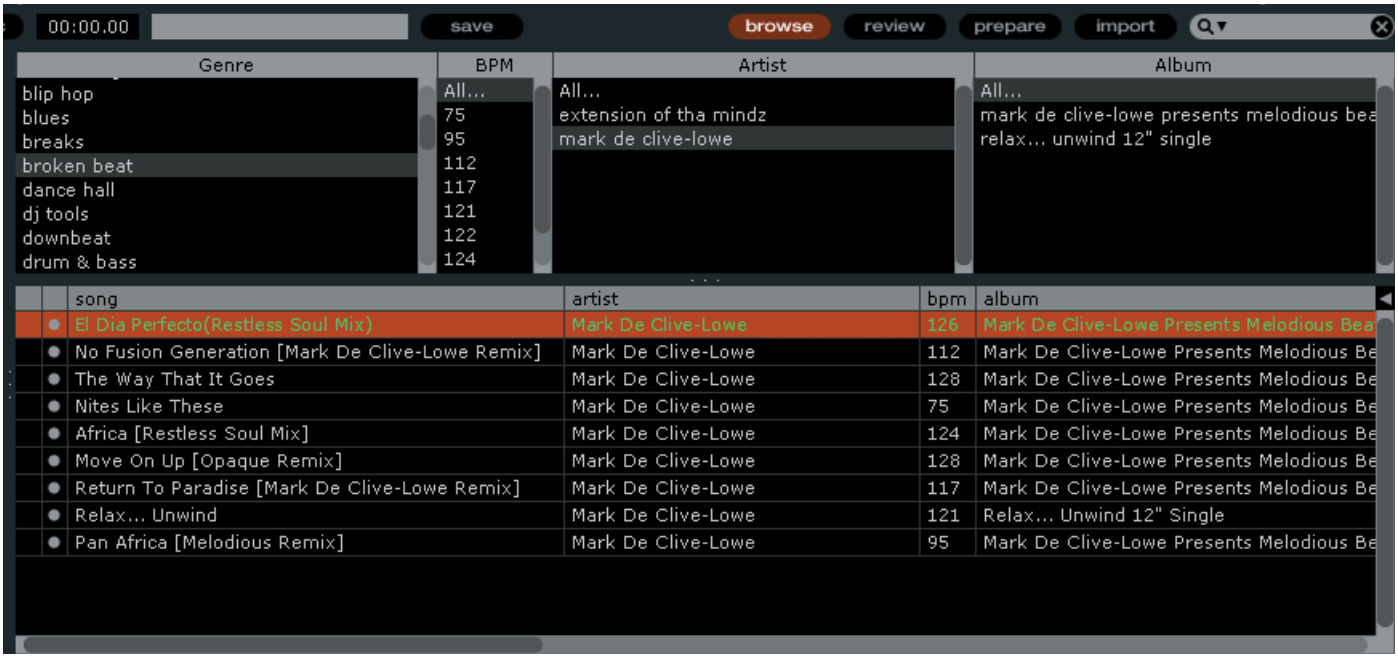
Click on the column button ◀ to select which columns you want to display.

To sort your library by a column, click the column header so it highlights. For example, clicking on the album column header will sort your library alphabetically by album title. To move a column, drag the header to the left or right. To resize a column, click on the column boundary and drag it to the left or right.

#	song	artist	album	bpm	genre	length
5	Five Day Night feat. Dallas	Tubbs	Good Days, Better Nights	70	Electronica/Dance	03:57.01
1	Get off (manuel bundy remix)	One million dollars	Ultra Sound	79	Beats	04:27.70
7	Hey Son (Flash Harry remix)	The Black Seeds	Pushed (Keep On Pushing Remixed)	82	Reggae	03:50.77
9	Push on thru	Salmonella Dub	Kaikoura Roots Fesitval	85	Reggae	04:51.55
8	Ekadek	Love In Your Eyes	Styles upon Styles - Urban Soul Pollination	90	Jazz	04:25.06
6	Imon Star	Vitality	Styles upon Styles - Urban Soul Pollination	98	Beats	03:38.72
4	Slide	Mark de Clive-Lowe	Antipodean Records	125	Broken Beats	04:32.90
2	Midnight Marauders (Mu Dub)	Joe Dukie & DJ Fitchie		132	Dub Disco	08:17.87
3	When I Return (Featuring Lady6)	ShapeShifter	Riddem Wise LP	169	Drum & Bass	05:25.56

Using the song browser

The song browser allows you to filter your song list by Genre, BPM, Artist and Album. To turn the song browser on or off, click the **browse** button.

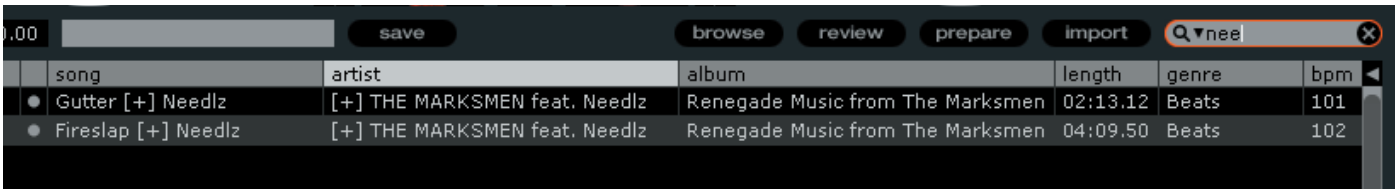

00:00.00
save
browse
review
prepare
import
Genre
BPM
Artist
Album
blip hop
blues
breaks
broken beat
dance hall
dj tools
downbeat
drum & bass
All...
75
95
112
117
121
122
124
All...
extension of tha mindz
mark de clive-lowe
All...
mark de clive-lowe presents melodious bea
relax... unwind 12" single
song
artist
bpm
album
El Dia Perfecto(Restless Soul Mix) Mark De Clive-Lowe 126 Mark De Clive-Lowe Presents Melodious Bea
No Fusion Generation [Mark De Clive-Lowe Remix] Mark De Clive-Lowe 112 Mark De Clive-Lowe Presents Melodious Be
The Way That It Goes Mark De Clive-Lowe 128 Mark De Clive-Lowe Presents Melodious Be
Nites Like These Mark De Clive-Lowe 75 Mark De Clive-Lowe Presents Melodious Be
Africa [Restless Soul Mix] Mark De Clive-Lowe 124 Mark De Clive-Lowe Presents Melodious Be
Move On Up [Opaque Remix] Mark De Clive-Lowe 128 Mark De Clive-Lowe Presents Melodious Be
Return To Paradise [Mark De Clive-Lowe Remix] Mark De Clive-Lowe 117 Mark De Clive-Lowe Presents Melodious Be
Relax... Unwind Mark De Clive-Lowe 121 Relax... Unwind 12" Single
Pan Africa [Melodious Remix] Mark De Clive-Lowe 95 Mark De Clive-Lowe Presents Melodious Be

Searching

Scratch LIVE includes a search function to help you find files quickly and easily. Enter text into the search box and Scratch LIVE will automatically find as you type.

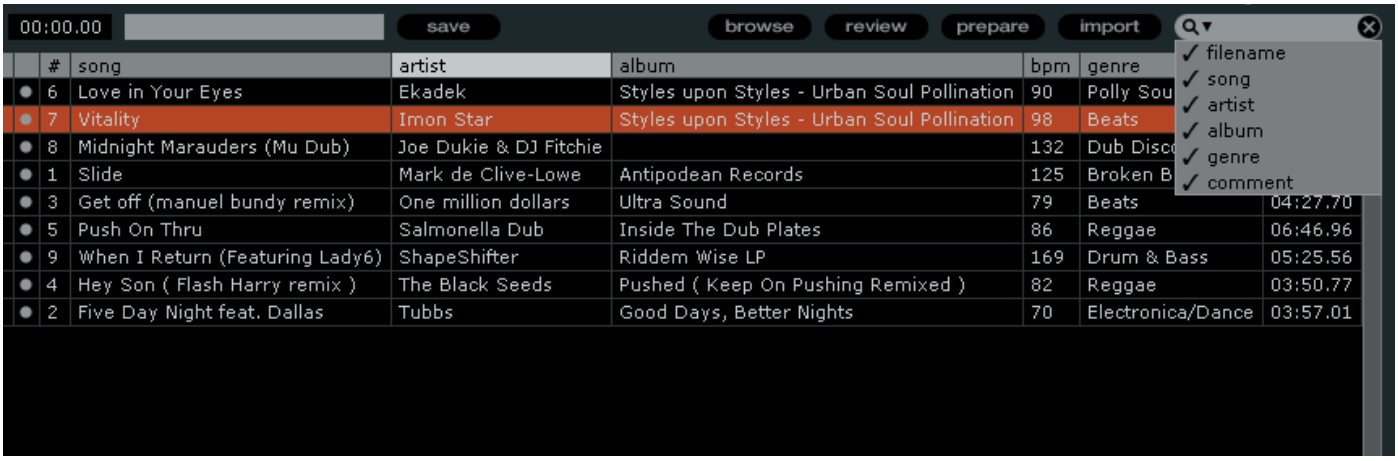
Tip: Use the keyboard shortcut ctrl-f *to jump to the search box. This keyboard shortcut will also take you out of any crate or playlist that you might be in and into your main library, so you can find any track in your collection. If you then click on a crate or playlist, the search query will be cleared.*

search box



To select which fields the search function will look through, click on the left hand side of the search box. The drop down menu shows which fields are currently being used.

Press **esc** or the **x** button on the right of the search box to clear the search.


00:00.00
save
browse
review
prepare
import
filename
song
artist
album
genre
comment
song artist album bpm genre
6 Love in Your Eyes Ekadek Styles upon Styles - Urban Soul Pollination 90 Polly Sou
7 Vitality Imon Star Styles upon Styles - Urban Soul Pollination 98 Beats
8 Midnight Marauders (Mu Dub) Joe Dukie & DJ Fitchie 132 Dub Disc
1 Slide Mark de Clive-Lowe Antipodean Records 125 Broken B
3 Get off (manuel bundy remix) One million dollars Ultra Sound 79 Beats 04:27.70
5 Push On Thru Salmonella Dub Inside The Dub Plates 86 Reggae 06:46.96
9 When I Return (Featuring Lady6) ShapeShifter Riddem Wise LP 169 Drum & Bass 05:25.56
4 Hey Son (Flash Harry remix) The Black Seeds Pushed (Keep On Pushing Remixed) 82 Reggae 03:50.77
2 Five Day Night feat. Dallas Tubbs Good Days, Better Nights 70 Electronica/Dance 03:57.01

Prepare window

The prepare window is a holding area for tracks, much like preparing a set by lifting records part way out of your record bag. You can drag tracks (or whole crates) from the main track list into the prepare window, or simply drag them onto the prepare button. These tracks will be removed from the prepare window once they have been played. All tracks in the prepare window will be discarded when you exit Scratch LIVE.

Tip: Use the keyboard shortcut ctrl-p to add tracks to the prepare window.

Tip: Select the contents of the prepare window and drag them onto the new crate button (+) to save the selection.

Review window

The review window shows the tracks you have recently played in the order in which they were played. Tracks you have played recently are colored green – press the **clear** button to reset the list of recently played tracks.

Tip: Select the contents of the review window and drag them onto the new crate button (+) to save a history of the tracks you played.

Editing ID3 tags

Much of the information associated with each file can be edited from within Scratch LIVE. Double click on the attribute within the main library to edit the attribute. Filename, length, size, bit rate and sampling cannot be edited. This information is saved in the file itself. Note that the **protect library** option in **setup** must be unchecked to allow edits.

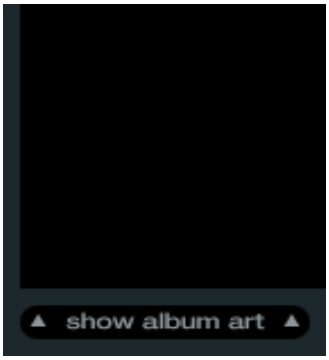
See **Preparing your files** on page 18 for details on prebuilding overviews and auto BPM.

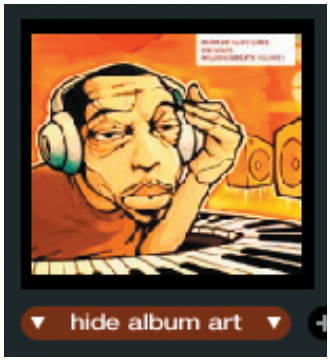
*Tip: Use the keyboard shortcut **ctrl-e** to edit text. Hold down the ctrl key and move with the arrow keys to change to a different field while staying in edit mode. When you have more than one file selected, editing tags changes all the files in your selection.*

Tip: The second column in the library ● is the label color for that file. Click it to bring up a color palette, and customize the virtual deck for that file.

Display album art

MP3 files can contain album art information. To display this album art, click the **show album art** button. There are many third party applications available for adding album art to MP3s. We recommend Apple's iTunes™.





Status icons

The leftmost column shows the status of each track. The image to the left shows 5 tracks with differing statuses.
From top to bottom:

• Scratch LIVE has detected some corruption in the MP3 file. If possible, re-encode the MP3.

• The track has been imported from the iTunes™ library.

• The track has been imported from the iTunes library, and Scratch LIVE has detected some corruption in the MP3 file. *Solution:* If possible, re-encode the MP3.

• The track cannot be found. Most likely the file has been renamed or moved.

• Scratch LIVE is trying to import a track from the iTunes library, but cannot find the file.

• Tracks that are read-only have a locked icon.

More info on corrupt files

If you have a corrupt file in your library, hover your mouse over the status icon for information on what type of corruption was found. Detailed explanations of these messages can be found on page 41, and more help with these is at **scratchlive.net**.

Playing tracks direct from audio CD

You can play tracks direct from an audio CD in your CD-ROM drive. When you insert the CD into your computer, it appears under your Scratch LIVE library. Click on the CD and the tracks will be displayed in the track list.

Tip: Disable any third-party CD Auto-Play functions before inserting a CD, as they may interfere with Scratch LIVE.

Previewing tracks

You can preview the tracks in your library using your computer's default media player. Highlight a track and press ***ctrl-o***. This will launch the player your computer has associated with the file type, and start playback. Also applies to the **import** panel.

Autobackup

Scratch LIVE stores your library database and crates information in a ScratchLIVE folder on your hard disk. This folder is created on a drive when files from that drive are added to Scratch LIVE. This way, there is one on your system drive and there will be one on every external drive that you use with Scratch LIVE.

Auto backup creates a copy of the Scratch LIVE folder on your system drive once a week on startup. If an external drive containing a Scratch LIVE folder is detected it will be backed up if the last backup on that drive is older than a week or if no backup exists.

A copy of each ScratchLIVE folder called ScratchLIVEbackup is created next to the folder it is backing up.

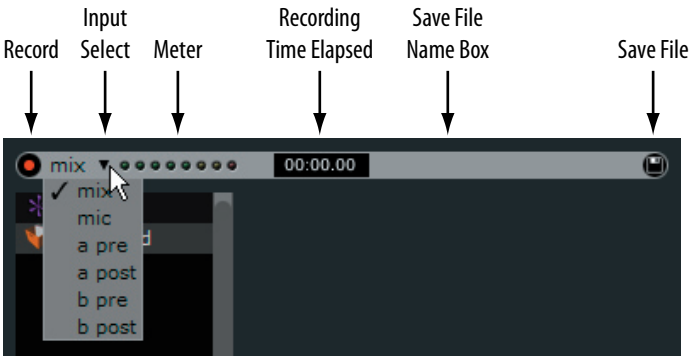
Auto-Backup will only keep ***one*** level backup at a time. Each time autobackup runs it overwrites the previous backup.

Recording

Scratch LIVE allows you to record one of six stereo signals from the TTM 57SL:

- Main Mix
- AUX BUS (sum of MIC, AUX and Flex-FX Return)
- PGM 1 (a) Pre-Fader
- PGM 1 (a) Post -Fader
- PGM 2 (b) Pre-Fader
- PGM 2 (b) Post -Fader

Stereo recording is possible even while using two stereo vinyl control inputs.



1. Click on the downward arrow (icon) to get the drop menu displaying the six possible record sources.
2. Select the desired source and press the ● record icon to start recording.
3. The record icon flashes while recording and the display shows the elapsed recording time.
4. Press the ● record icon again to stop the recording.
5. To save the recording, type in a name for the recording and click the ■ save icon.
6. The recording is automatically placed in a crate named "RECORDED". If the crate does not already exist, it will be created automatically.
7. To start a new recording without saving, simply click the record button again.

Recordings can be loaded onto the decks, renamed and managed like other files. Recordings are saved in "MyDocuments\My-Music\ScratchLIVE\Recording" on a PC and "~/Music/ScratchLIVE/Recording Temp" on a Mac. Recordings are saved as 16-bit, 44.1 kHz stereo AIFF files

Tips:

- The keyboard shortcut **ctrl-n** turns recording on and off
- You can load a recording without saving it using the short cut keys **shift** ← to deck 1 or **shift** → to deck 2.
- If the Virtual Deck is set to **internal** mode and is unloaded, the input record level is sent to the Virtual Deck's higher resolution stereo meters. *E.g.,* if you're recording from input **2**, set the right Virtual Deck to **int**, eject the track if there is one loaded, and the Virtual Deck's meters will show the signal coming into input **2**.

Recording directly with the TTM 57SL soft controls is possible using the Record Group and an optional footswitch. See page 34.

Note: Any recordings over 3 hours are automatically split into individual files.

Keyboard shortcuts

These actions can be accessed directly from the computer keyboard.

Key	Action
ctrl - L	Locate the current track. This will highlight the track you most recently loaded. Pressing ***ctrl - L*** again will alternate between the tracks recently loaded on both decks.
ctrl - R	Reveal - the highlighted song is opened in a file browser.
ctrl - F	Find - moves the cursor to the search box.
ctrl - A	Select all.
ctrl - C	Copy text in edit mode.
ctrl - E	Edit text.
ctrl - V	Paste text in edit mode.
ctrl - X	Cut text in edit mode.
ctrl - Z	Undo last track load.
shift - ctrl - ↑ ***shift - ctrl - ↓***	Move focus up / down through the library or crates. Note that if you have a song highlighted in the song view, and use ***shift - ctrl - ↑ ↓*** you will move up or down through the library or crates. When you release the shift or ctrl key, the focus will go back to the song view so that you can move up and down through songs using ↑ ↓.
ctrl - P	Add tracks to the prepare window.
ctrl - N	Start a new mic recording.
ctrl - O	Open the track in your default MP3/WAV/OGG/AIF player.
- or +	Zoom the main waveform display.
tab	Alternate focus between crates or songs.
ctrl - del and ***ctrl - backspace***	Remove track from library, remove track from crate, delete crate (does not delete the file).
ctrl - shift - del and ***ctrl - shift - backspace***	Delete the file from your library *and* send to the recycle bin. (Note to iTunes users: files in your iTunes library cannot be deleted this way).
ctrl - shift - /	Toggle the input reverse switch
esc	Clear search string if searching, or **exit Scratch LIVE**.

Note: Playback, cue and speed controls use Shift or Caps Lock

Left Deck	Action	Right Deck
ctrl - ← or ***shift - ←***	Load the highlighted song to a deck.	***ctrl - →*** or ***shift - →***
ctrl - shift - →	Load the track currently on one deck onto the other deck as well.	***ctrl - shift - ←***
ctrl - /	Swap the two currently playing tracks from one deck to the other.	***ctrl - /***
shift - alt - ←	Unload the track from a deck. (***shift - option - ←*** or → on some Macs).	***shift - alt - →***
ctrl - , (comma)	Place a cue point.	***ctrl - . (period)***
1 2 3 4 5	Jump to cue points in track. (**relative** and **internal** modes)	***6 7 8 9 0***
F1	Switch deck to **absolute** mode.	***F6***
F2	Switch deck to **relative** mode.	***F7***
F3	Switch deck to **internal** mode.	***F8***
F5	Key lock on / off.	***F10***
Q	Play / pause reverse.	***A***
W	Play / pause forward.	***S***
E	Pitch down.	***D***
R	Pitch up.	***F***
T	Bend down. (**relative** and **internal** modes)	***G***
Y	Bend up. (**relative** and **internal** modes)	***H***
U	Censor. (**relative** and **internal** modes)	***J***
I	Go to temporary cue point. (**relative** and **internal** modes)	***K***
O	Set / adjust loop in-point.	***L***
P	Set / adjust loop out-point.	***;***
[	Loop on / off.	***'***
ctrl - [	Jump to selected loop.	***ctrl - '***
alt - Q	Load previous track.	***alt - A***
alt - W	Load next track.	***alt - S***
alt - E	Rewind. (**relative** and **internal** modes)	***alt - D***
alt - R	Fast forward. (**relative** and **internal** modes)	***alt - F***
alt - O	Previous loop.	***alt - P***
alt - L	Next loop.	***alt - ;***
alt - 1 to 5	Auto loop bar length. ie., if display shows 1 2 4 8 16, alt-1 = 1 bar, alt-5 = 16 bars.	***alt - 6 to 0***
alt - space bar	Activate the tempo tapper.	***alt - space bar (2x)***
ctrl - I	Set temporary cue point. (**relative** and **internal** modes)	***ctrl - K***

Additional setup

This section covers general preferences and adjustments you can make to improve the performance of Scratch LIVE. From the main screen, tick **setup** to get to this area.

Hardware

This area contains settings dedicated to the TTM 57SL.

Firmware

If a firmware update is available after installing a new Scratch LIVE software release, an **update firmware** button appears in the setup screen. The firmware upgrade takes approximately 10 seconds, during which time the mixer will not be usable. If for any reason the firmware upgrade does not work, just turn the mixer off and back on again. It's not possible to damage the mixer whilst performing a firmware upgrade.

Note: Newer firmware may not work with older versions of Scratch LIVE! The mixer will still be usable with older Scratch LIVE versions, but the effects do not display parameter values onscreen so you will not be able to see how the effects are configured. You will have same control over the effects that you have when using effects without Scratch LIVE connected.

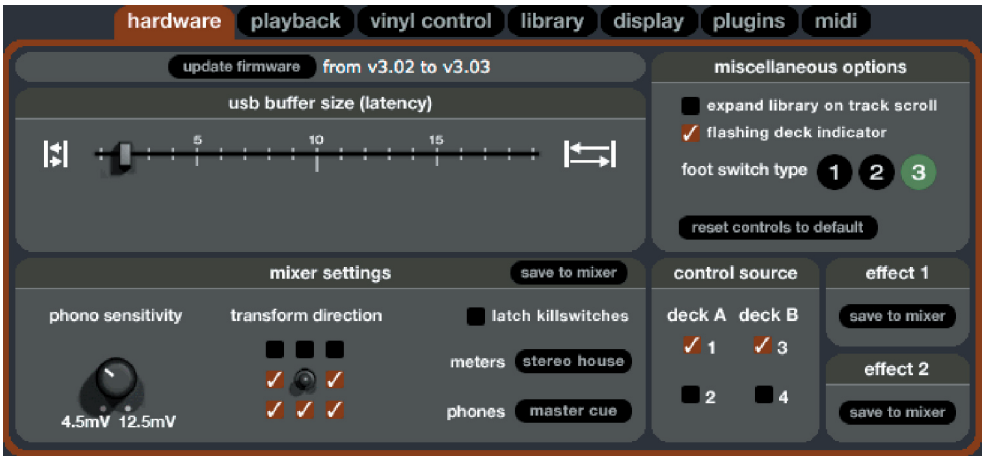
If you are using a mixer that is not yours and shared by other people please DON'T UPGRADE their firmware without their permission. If you don't click on **update firmware**, the mixer will run fine on the older firmware without the new effects.

If you have upgraded your firmware and you need to downgrade please do the following:

1. Run the older version of Scratch LIVE with the mixer attached.
2. Power off the mixer.
3. Hold the two High kill buttons down while powering on the mixer.
4. The kill lights will all be lit up red, and the firmware will downgrade to the version that shipped with that Scratch LIVE version. When the kill lights go out, the update is complete.

usb buffer size (latency)

Scratch LIVE processes audio in small chunks. When smaller chunks are used, the movement of the record is translated into audio more often which results in a lower overall system latency. However, this requires more processing and therefore a higher CPU load, so lower buffer size settings require a more powerful computer to produce uninterrupted audio. If you want tighter control, you should try decreasing this setting, on the other hand, if you experience audio dropouts, you need to increase this setting (or use a more powerful computer).



mixer settings

save to mixer

The following settings are transferred to the mixer with the central **save to mixer** button.

- Transform direction.
- Latched or momentary kill switch preference.
- Phono sensitivity.
- Meter setting (Stereo House / Dual Mono Cue).
- Phones setting (Master / Cue)

Each of the **save to mixer** buttons in the **effects** sections save to the mixer processors independently so it can be used without Scratch LIVE running and attached.

phono sensitivity

Set the phono sensitivity at the level of your cartridge (see your cartridge documentation for the value). This will make your turntable inputs the same level as your line inputs.

transform direction

The joysticks also double as transform switches. To change the joystick from software control to transform, press the joystick down – as if you were trying to push it down into the mixer, you'll here a click – and hold it down until the green LED lights. The eight check boxes around the joystick image show the directions you can move the joystick. The audio will cut out when the joystick is moved in a direction that is checked.

latch kill switches

The EQ kill switches on the mixer can be set to be either momentary (on while the button is held down) or latched (on until the button is pressed on). Select this option to keep the kills on until you press the button again.

meters

This button switches the meter mode, which is be reflected by the mixer hardware. Stereo House = *on*, dual mono cue = *off*. For more information see page 5.

phones

This button changes the state of the Master Cue button on the mixer. Main mix goes to phones when *on*, and the cue slider position goes to phones when *off*. For more information see page 6.

miscellaneous options

expand library on track scroll

With this option turned on, the hardware panel will hide temporarily while you are using the mixer to scroll through your library.

flashing deck indicator

The flashing deck indicator shows which Virtual Deck is selected by the deck button on the mixer. When this option is on, a red border will flash around the selected virtual deck.

foot switch type

The TTM 57SL supports 1, 2 or 3 button footswitches. Click on the number that corresponds to your foot switch.

reset controls to defaults

Each of the software control assignments can be customized. Click this button to reset all the control assignments/mappings to their default state.

Control source

Any of the four inputs on the TTM 57SL can be set to control Scratch LIVE. Use these two knobs to choose the inputs that are used to control Scratch LIVE.

Playback

general

track end warning

Enable track end warning to flash the virtual deck as you approach the end of the track. The label will start flashing 20 seconds from the end of the record. The track end warning does not apply to any tracks under 1 minute long.

playback keys use shift

This is checked by default. Unchecking this option will enable all of these keys without pressing shift or having caps lock on. This applies to all cue points (1...0) and cue controls (QWERTY etc). See page 31 for all keyboard shortcuts.

lock playing deck

Every DJs nightmare used to be lifting the needle of the wrong turntable in the middle of a set. This setting helps to avoid the digital equivalent – loading a new track to the wrong deck. When checked, you can only load a track if the target deck is stopped.

sort cues chronologically

The five cue points can be placed in any order, and can be dragged up and down if you wish to reorder them. If you prefer to lock them to chronological order, turn this option on.

use auto gain

For songs with overviews built (by version 1.7.2 or later), check this if you want to use the calculated auto gain value while playing songs. There is also a target gain dropdown menu next to this option, that sets the target gain that you would like. This can be turned on / off, and the target gain changed on the fly. If you change the target gain while a song is loaded to a deck, the change will apply the next time a song is loaded.

When a track is in auto gain mode (auto gain is turned on and the track has an auto gain setting), the track gain knob appears depressed to provide visual feedback that auto gain is in effect for that track. To fine tune your gain values, you can still change each file by the gain knob. To reset the gain to the calculated auto gain value, alt-click the gain knob.

hi-fi resampler

This significantly reduces digital distortion at very slow or very fast record speeds, increasing the CPU load slightly. This option is on by default, and the old resampler is used when switched off.

on song load

play from start

Enable this to start all tracks from the beginning when loaded in **relative** and **internal** modes. If this setting is not enabled, freshly loaded tracks will continue to play from the point the last track was at. This option is on by default. This option is overridden by the **instant doubles** and **play from first cue point** options.

instant doubles

This quickly matches the playhead position of two tracks. With this on, when you load a track on one virtual deck already loaded on the other virtual deck (it must be the same file), the playhead will jump to the position of the track that was loaded first, with the keylock state and looping settings copied. This setting overrides **play from start** and **play from first cue point** options.

Play from first cue point

Enable this to start all tracks from the first cue point when loaded in **relative** and **internal** modes. This overrides **play from start**.

braking (internal mode)

This controls how fast the deck stops when play is stopped. Counterclockwise, the stop is immediate. Clockwise rotation increases the stop from a finger grab all the way to a slow turntable power-down.

audio output

Sets the audio output to mono or stereo.

Vinyl Control

vinyl control

reverse vinyl scroll

This setting allows you to reverse the direction of Vinyl Scroll. For a full description, see page 19.

adjust loops with vinyl

Loop end points can be adjusted using the control vinyl, as described on page 25. Disable this option if you wish to use the computer's arrow keys to adjust loops, and keep audio playback controlled by the vinyl.

next song on flip

When this option is enabled, changing the side of control vinyl you're using ('flipping the record') loads the next song, as with the **Autoplay** function (see page 22).

Vinyl scroll speed

Vinyl Scroll allows you to load a new track without touching the computer, simply by lifting the needle and placing it in the special section of side **A** of the control record. For a full description, see page 19. This setting allows you to adjust the sensitivity of Vinyl Scroll, so that you can control the amount of record movement required to move between tracks.

needle dropping (relative mode)

These options configure needle dropping functionality while in **relative** mode.

drop to absolute position

This detects a deliberate repositioning of the needle, and moves the playhead to the absolute position of the needle, as in absolute mode. Accidental skipping of the needle does not reposition the playhead.

drop to cue points

This option triggers the corresponding cue point when the needle is repositioned into one of the first 5 one-minute sections on the control vinyl. For instance: needle dropping into the second minute on the left turntable, will send playback for deck 1 to cuepoint 2, if that cuepoint is set.

vinyl start offset

If you have cue burn at the beginning of the record, you will notice the tracking will be poor at this point. Use the two knobs to offset the start point, so the track will start playing from a point further into the control record. The first knob sets the number of whole minutes to offset by, the second knob sets the number of whole rotations within that minute.

Library

Read iTunes™ library

Existing iTunes users will recognize many features from iTunes. Scratch LIVE can read the iTunes library format, and will automatically import the iTunes library and iTunes playlists. iTunes is available for Mac and PC, for more information about iTunes, visit *www.apple.com*. Click **read iTunes library** to activate.

Note: it may take some time to read your iTunes library if it contains a lot of tracks. If you edit the file information of tracks from your iTunes library, the changes will not appear in iTunes until after you play the track. Scratch LIVE cannot play files that have been protected by Digital Rights Management systems, such as those sold through the Apple iTunes Music Store.

protect library

Uncheck this setting to remove files and crates from your library. Enable to lock your library and prevent accidental file or crate deletion while using Scratch LIVE. Enabling this setting will also lock all file tags and crate names, so that no text can be changed.

center on selected song

With this option on, scrolling up and down in your library holds the selected track in the middle of the library panel.

show all file types

Enable this option to show all files when importing tracks into Scratch LIVE. If this option is not selected, only files that Scratch LIVE can play will be displayed.

include subcrate tracks

As described on page 27, you can drag crates into other crates to make subcrates. If you have the "include subcrate tracks" option turned on, any crate will also display the contents of all its subcrates.

auto fill overviews

Enable this setting to automatically generate the track overview as soon as a track is loaded. If this setting is not enabled, the track overview will be generated as the track plays. Automatically generating the track overview uses more of the computer's CPU power, and should be disabled on slower computers.

import AAC files

Turn this option off if you do not wish to import AAC files into your library. Changing this option will cause your iTunes library to be reloaded if you have the **read iTunes library** option turned on.

rescan ID3 tags

Click this button to force Scratch LIVE to re-read all file tags. Use this function if you have edited or modified file tags outside of Scratch LIVE.

Tip: Rescanning the tags is a handy way to identify all the files that Scratch LIVE can't find (for example if the files have been altered or moved). These tracks will show up red in the main track list, with an exclamation mark in the status column. You can sort by the status column to group all these tracks together.

relocate lost files

If you've moved some files which are already in your library, they will show up as not found and displayed in pink. Drag a folder from finder (mac) or explorer (windows) on the **relocate lost files** button to search it and any sub-folders, for files currently marked as not found in your library to update them with their new location.

Display

user interface settings

maximum screen updates (per second)

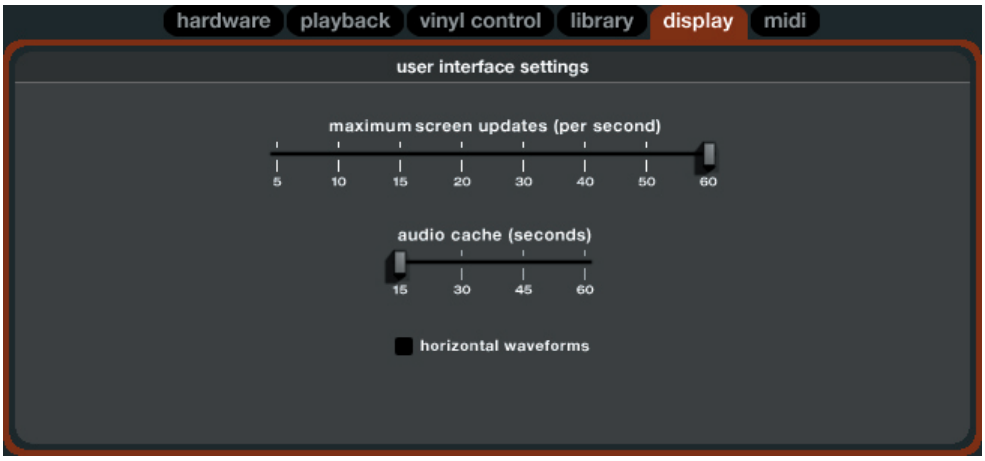
This feature allows you to throttle back the screen refresh rate. Users with slower computers might like to do this if they are having performance issues. It could also be useful if you want to limit Scratch LIVE's processor usage, for example if you are running a recording program at the same time. The default setting is 60 Hz, or refreshed 60 times per second. This setting applies to the entire screen (i.e. the Virtual Decks, the Waveforms, the library, and the setup screen).

audio cache (seconds)

Use the slider to set the amount of audio that is loaded into memory. A small audio cache will place less load on your computer, and the tracks will load faster. A large audio cache will give you a bigger view of the waveform when the main waveform view is zoomed out.

horizontal waveforms

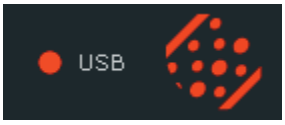
Check this option to display the main waveform view horizontally. The waveform will expand to fill available screen space. If you are using a widescreen computer, increase the **audio cache** size to make the waveform bigger.



Plugins

Appears for users of the VIDEO-SL video plugin for Scratch LIVE. For more information on VIDEO-SL see www.serato.com.

USB dropout indicator



The USB dropout indicator on the main screen is a useful trouble shooting tool if you have problems with audio dropouts. Such dropouts are caused by an interruption in passing the audio to the Scratch LIVE hardware interface. If such an interruption (or dropout) occurs, a red light will appear briefly, just to the left of the Scratch LIVE logo at the top of the screen. The light will be red for one second, and then orange for four seconds.

If you do experience USB drop outs:

- Increase the USB audio buffer size (in the **setup** screen).
- Try closing other applications that are running at the same time as Scratch LIVE.
- Try turning off background tasks, for example, wireless networking.
- Visit the forum at scratchlive.net, and try some of the computer optimization tips in the **Tips and Tricks** section.
- If your CPU load is very high, try decreasing the maximum screen updates (in the **setup** screen).

The hardware control panel

When you connect the TTM 57SL to Scratch LIVE, the hardware control panel appears. You can show or hide this panel by clicking on the **hardware** button.

You can control many of the features of Scratch LIVE directly from your TTM 57SL mixer. The hardware panel shows you what functions in the software are connected to the physical controls on the mixer, and allows you to customize the control assignments. It also provides an interface for the effects running in the mixer.

Controlling Scratch LIVE from the TTM 57SL

Each of the controls on the mixer controls a software function in Scratch LIVE.

Each parameter knob (labeled **P1** and **P2** on the mixer) has two states. The LED next to P1 and P2 on the mixer indicates the state: the control *above* applies when the LED is *off*, the control *below* applies when the LED is *on*. Some controls, such as "tap tempo", and "load track" are momentary.

The joysticks **J1** and **J2** also have two states. When the LED next to J1 or J2 is *on*, the joystick controls Scratch LIVE software. When the LED is not lit, the joystick acts as a transform switch. To switch between using the joystick as a control for Scratch LIVE and a transform switch, press the joystick straight down and hold it down.

Note: the joystick is also a button, press it straight down, as if you were trying to push it into the mixer – you will feel it click.

When you are in transform mode, the LED next to the joystick is not lit, and its controls on the Scratch LIVE hardware panel are grayed out.

Groups

Functions are organized in a series of groups. Each group contains a bank of software controls. The first two groups are custom groups, designed to contain the commands you need most often during a set. The next four groups contain other functions ordered by category.

To access a group, press the **GROUP** button on the mixer, then press:

B1 – general: Custom group 1, with the most common commands.

B2 – library: Custom group 2 — move through library, make new recordings.

B3 – playback: Control all playback functions directly from the mixer.

B4 – cue/loop: Full control over all cue points on both Virtual Decks and looping.

B5 – recording: Select source and start / stop / save / play recordings.

B6 – effects: Select and insert effects. Adjust effect parameters.

Customizing the control assignments

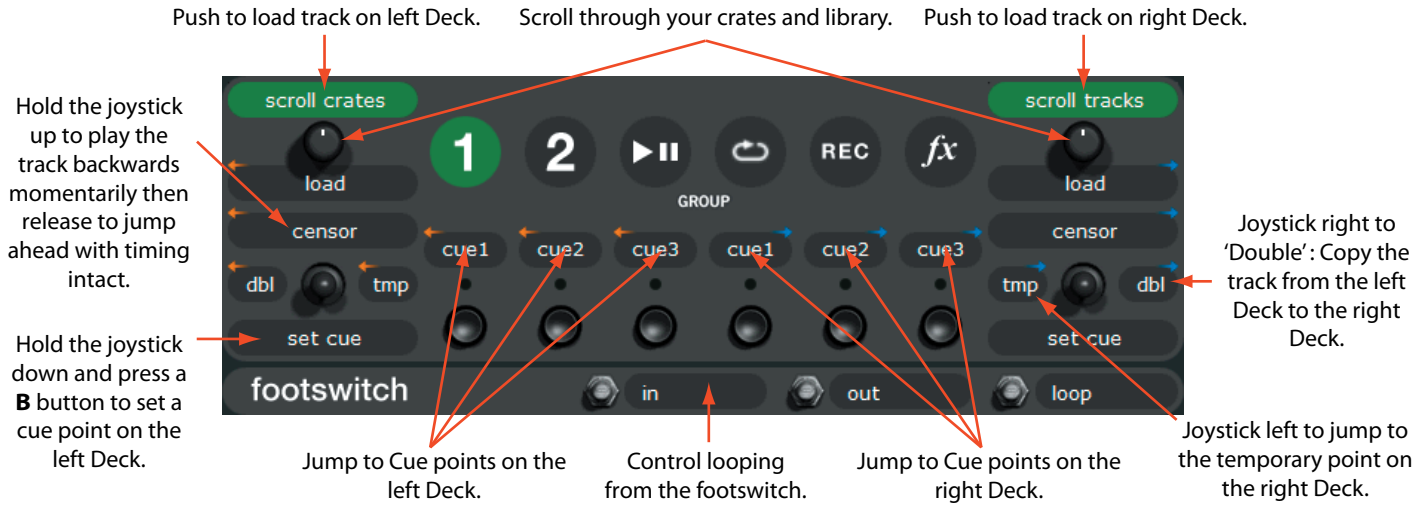
You can customize almost all of the software control assignments. To change what a button, parameter knob or joystick does to Scratch LIVE, *right-click on the control label.* A list appears, and you can choose the new function you wish to have associated with that control.

Some software functions can be assigned to either the left or the right Virtual Deck. If you choose a function that can be assigned to a Deck, after you select the function from the menu, you will be presented with another list. Choose **selected deck** to have the function controlled by the **DECK** button on the mixer, or **left deck** or **right deck** to have it always apply to one of the decks.

Any customization resides in the computer, not in the mixer. This means that if two different DJs, each with their own laptop, use the same mixer, each DJ can have their own custom groups. See the **save to mixer** function on page 32.

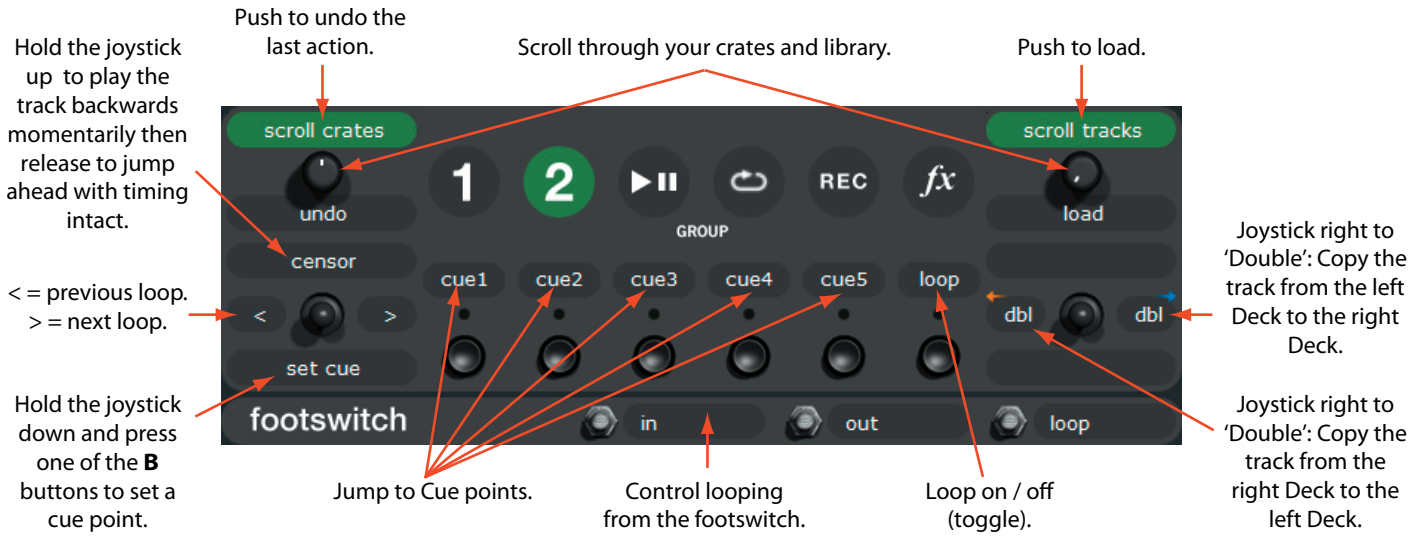
1 (Group B1) general controls (custom group 1)

This is the first group shown below with default commands when you first start Scratch LIVE. These give you basic playback controls and up to three cue points per Virtual Deck. The orange arrows (left) control the left Virtual Deck and the blue (right) arrows control the right Virtual Deck. The joysticks default to transform mode (LEDs off). Press the joystick *in* (LED on) to activate its controls as shown here.


Push to load track on left Deck.
Scroll through your crates and library.
Push to load track on right Deck.
Hold the joystick up to play the track backwards momentarily then release to jump ahead with timing intact.
Hold the joystick down and press a B button to set a cue point on the left Deck.
Joystick right to 'Double': Copy the track from the left Deck to the right Deck.
Joystick left to jump to the temporary point on the right Deck.
Jump to Cue points on the left Deck.
Control looping from the footswitch.
Jump to Cue points on the right Deck.
scroll crates
scroll tracks
load
censor
dbl
tmp
set cue
cue1
cue2
cue3
1
2
REC
GROUP
footswitch
in
out
loop

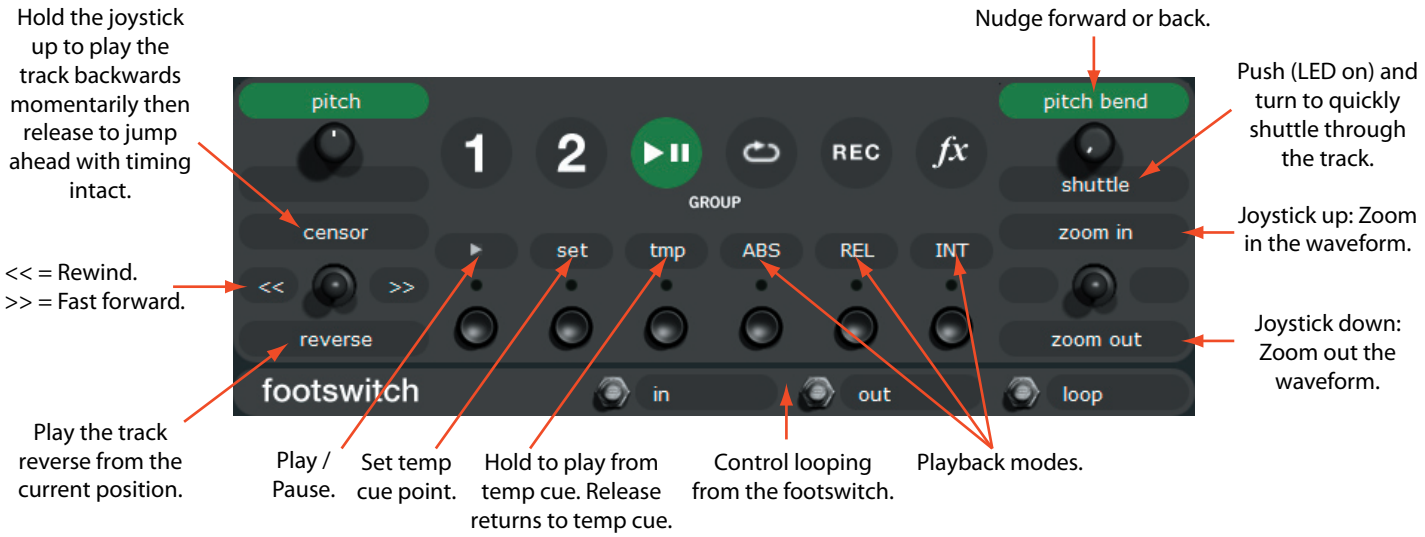
2 (Group B2) library (custom group 2)

In this second custom group, many of the functions can be applied to either of the Virtual Decks. To select which of the Virtual Decks a given effect is applied to, press the mixer's **DECK** button. The LED next to the button indicates which of the Virtual Decks the software function applies.



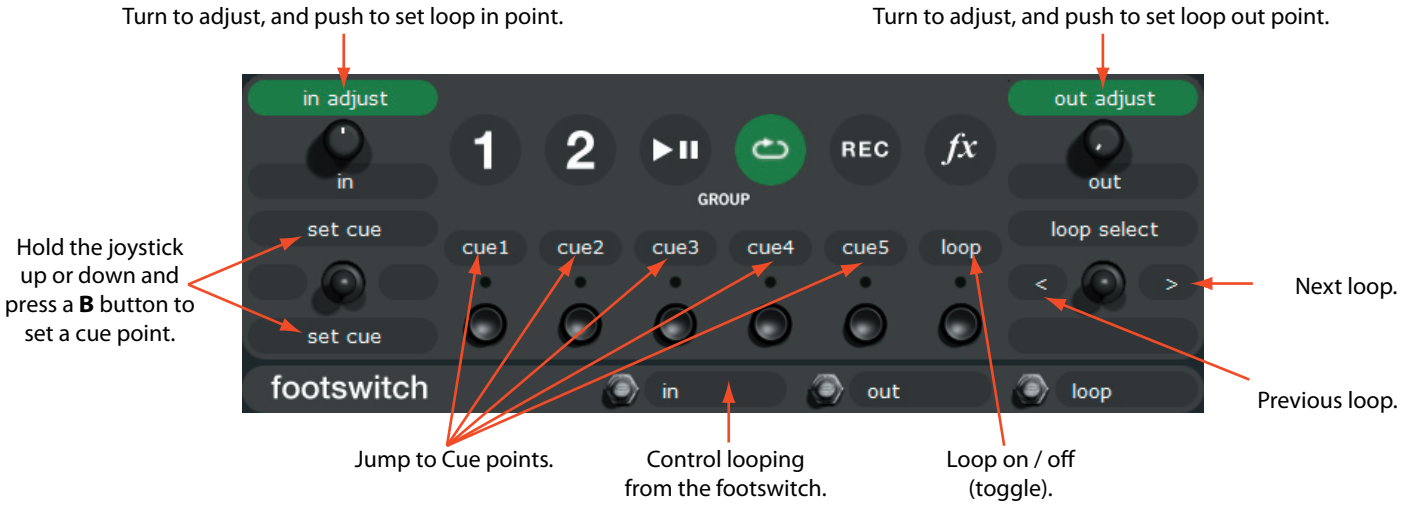
(Group B3) playback

To access this group, press the **GROUP** button on the mixer, then press **B3**. This group contains all the software functions required for mixing in **internal** mode. To select which of the Virtual Decks a given effect is applied to, press the mixer's **DECK** button. The LED next to the button indicates which of the Virtual Decks the software function applies.



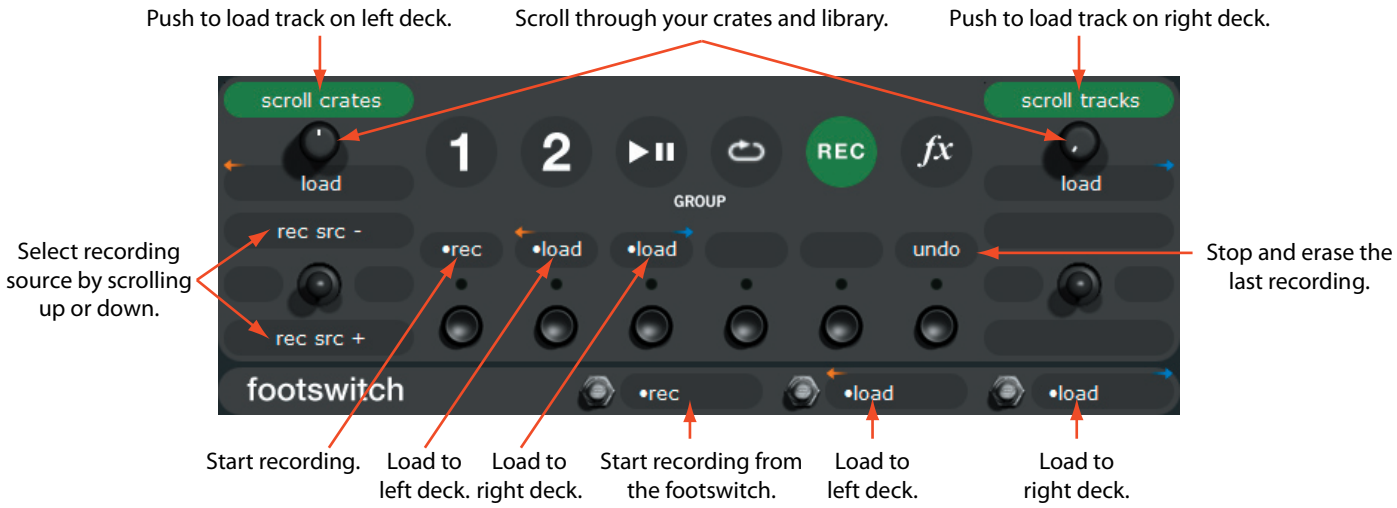
(Group B4) cueing & looping

To access this group, press the **GROUP** button on the mixer, then press **B4**. This group gives you access to all the cue points and looping functions. To select which of the Virtual Decks a given effect is applied to, press the mixer's **DECK** button. The LED next to the button indicates which of the Virtual Decks the software function applies.



(Group B5) recording

To access this group, press the **GROUP** button on the mixer, then press **B5**. In this group you can select your input source, start and stop recording, and load this new recording to either Virtual Deck.

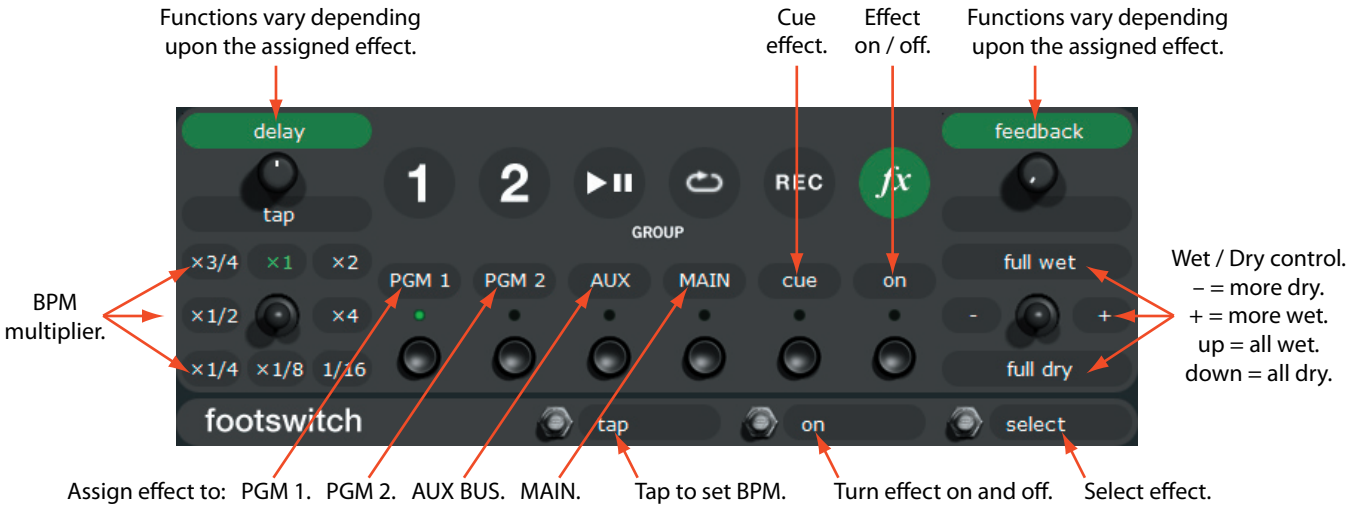


(Group B6) effects

The TTM 57SL has two built in effects processors. Unlike other groups, when you are in the effects group, the **DECK** button on the mixer switches between these two effects processors. **DECK 1** activates Processor 1, and **DECK 2** activates Processor 2. Each effect has parameters controlled by **P1** and **P2**. See the Effects section with all the details on page 8.

The left joystick, **J1**, sets the BPM (tempo) multiplier. Set the BPM by tapping P1 to the beat, or manually adjust by turning P1. The optional footswitch can also tap in the BPM. Use the left joystick to quickly halve, split, double or quadruple the tempo.

The buttons B1 through B4 set the effect's insert point: either PGM, the Aux bus (which includes the Mic) or the Main output.



Mixing with only one turntable

The single turntable technique allows you to mix as if you had two turntables, using just one. If one of your turntables is not performing properly, or if you only have one available, you will be able to continue to mix the way you are used to.

The following is a step-by-step description of mixing using a standard 2-channel mixer, with one turntable set up on the right hand side of the mixer. In this example, all mixing is done with the mixer crossfader.

1. Load a track onto the right deck in Scratch LIVE and play it in **absolute** mode. The crossfader is set to the right hand side.
2. Put the left hand deck into **internal** mode and load a track.
3. Flick the **reverse input control** switch. The physical record now controls the left hand deck in Scratch LIVE, and the right hand channel of Scratch LIVE plays on in **internal** mode.
4. Cue the record and mix in the track. Note that you will be using what feels like the wrong channel of your DJ mixer to do this – the crossfader will be moving away from the turntable.
5. Having completed the first mix, flick the **reverse input control** switch. The track you just mixed in will play on in **internal** mode, and the physical record is now back to controlling the right hand deck in Scratch LIVE.
6. Load a track on to the right deck in Scratch LIVE, and mix as normal.
7. Flick the **reverse input control** switch.
8. Load a track on the left deck, and mix — moving the cross fader the wrong way.
9. Flick the **reverse input control** switch, and repeat.

Mixing with only one turntable, using instant doubles instead of input reverse

When using Instant Doubles with internal mode, the pitch will get transferred to the second deck as well as the playhead position. This makes it easier to DJ using a single deck. (Start playing your song on the left deck with the turntable, then instant double over to the right deck, then fade to the right deck. Voila, the left deck is ready for a new track.)

TTM 57SL Specifications

Parameter, Specification, Conditions & Comments

Analog Inputs: 4 Stereo, Unbalanced RCA jacks:
.....Phono or line level input
.....Phono Response: RIAA ±1 dB, Gain: 30 dB at 1 kHz
.....Max input 133 mV
.....Input Impedance: 47.5k Ω, 200 pF
.....Line Gain: +15 dB to off @ 1 kHz
.....Auxiliary Input: Stereo Unbalanced RCA jacks
.....Gain: Off to +6 dB
FlexFX Return: Stereo Unbalanced ¼" TS (tip-sleeve) phone jack
FlexFX Send: Stereo Unbalanced ¼" TS phone jack
Mic Input: Active Balanced: ¼" TRS (tip-ring-sleeve) phone jack
.....Input Impedance: 511Ω, each leg to ground
.....Gain: 50 dB 1 kHz
.....Frequency Response: 30 to 20 kHz +0, -3 dB, max gain
.....CMMR: >40 dB 1 kHz, max gain
.....S/N: 76 dB Re 0 dBFS, max gain, 20 kHz BW
.....Tone Controls: 2-Band
Main/Booth Outputs: Stereo balanced XLR/TRS jacks
.....Frequency Response 15 Hz to 20 kHz +0, -3 dB
.....THD+N <0.005% re 0 dBFS, 20 to 20 kHz, 20 kHz BW
.....S/N (balanced output) 102 dB re 0 dBFS, A-weighted
Auxiliary Output: Stereo Unbalanced RCA jacks
General Specifications:
.....Maximum Input (all inputs): 4Vrms
.....Maximum balanced output (main and booth): 8Vrms
.....Maximum unbalanced output (FlexFx and AUX): 4Vrms
.....Mixer digital audio: 24-bit, 44.1 kHz, 102 dB dynamic range
.....USB digital audio: 16-bit, 44.1 kHz, 102 dB dynamic range
.....Crosstalk: -75 dB re 0 dBFS, 1 kHz
Universal Power Supply: 100 to 240 VAC, 50 Hz to 60 Hz
USB Power: Mixer is self-powered.

Note: All specifications are typical unless otherwise stated.

Troubleshooting and Frequently Asked Questions

The audio playback is dropping out / clicking / popping

Scratch LIVE is not getting a clear signal from the record, or your computer is not able to process the information quickly enough. Go to the **setup** screen and check the scope views. When the record is playing, the circles should be round, and the value in the bottom right corner should be 100%. If this is not the case, you need to calibrate. See page Manual–17 for details.

You should also try increasing the **USB audio buffer size** if your computer is close to the minimum spec.

Clean your needles! This is the most common cause of audio drop-out. Because you are playing the same record over and over, the needles will get dirty more quickly than usual.

The threshold goes to the far right when I click the estimate button

Make sure the needle is on the record and the record is stopped when you click **estimate**. If the slider goes hard right and stays there, you most likely have an earthing problem with your turntables/mixer. If you cannot eliminate this problem, use **relative** mode over **absolute** mode.

The tracks are playing backwards!

The inputs (from the turntables or CD players) are the wrong way around. Try swapping red and white wires at one end.

I can't get the Scope View to show nice clean circles

Select **phono** as the audio input level in the **setup** screen if you are using vinyl. Check your needles and make sure they are clean. If the circles look fuzzy, try cleaning your control record. If the Scope View shows a line instead of a circle, Scratch LIVE is only receiving a signal from one channel — check all your cables, and the connection between your cartridges and the tone arm. You can order replacement control records from your local distributor. You may also order these in the online store at *www.rane.com* if you are in the USA.

Scratch LIVE makes a strange "digital" noise, even when no track is playing

Scratch LIVE is interpreting background noise as record movement. Go to the **setup** screen and move the threshold slider (located to the left side of the **estimate** button) to the right until the noise stops.

The first time I play a new track, it takes a while to load

Scratch LIVE has to read the entire file and create a file index the first time it is loaded. This may take a few seconds for longer files. After the first load, it should load instantly. See Build Overviews on page 18.

I have a particular MP3 that won't play / plays badly / takes a long time to load / crashes the program. What should I do?

The file may be damaged. Please go to the forum at *scratchlive.net* and notify the support team that you have a bad file. By reporting damaged or corrupt files, you will help the developers to improve Scratch LIVE's ability to play damaged MP3 files in the future.

Scratch LIVE freaks out when I use the master tempo (key correction) function on my CD player

Scratch LIVE interprets the signal coming out of the CD player, and uses this information to control the play back of the files on your computer. Any audio processing performed on the signal before it reaches the hardware interface, such as key correction, will scramble the signal making it illegible to Scratch LIVE. Key correction will be available in Scratch LIVE in the future.

I get a loud screeching sound like a fax machine and no music, what am I doing wrong?

That is the sound of the control signal – make sure you are listening to the line outputs of the hardware interface.

Can I use one turntable and one CD player?

Yes. You need a phono preamp (as in a DJ mixer) to boost the signal from the turntable to line level, and you need to set the input to line in the **setup** screen.

When I do transform scratches (switching between phono and line level inputs) I hear a crazy noise; what's happening?

When you switch to phono level, you will hear the sound of the control vinyl. If you want to use the transform switches to scratch, use separate channels on your mixer if you have more than four channels, or disconnect the phono thrus if you have a two channel mixer.

I want to backup my library and crates or move them to another machine, so where are they stored?

Your database and crates are stored in the folder Home\Music\ScratchLIVE on a Mac, and My Documents\My Music\ScratchLIVE on a PC. Crates have the file extension .slc. If your library contains tracks that are stored on a drive other than your boot drive, a hidden folder called .scratchLIVE will be created in the root of that drive, and a separate database will be made in this folder. If it is a removable drive, the tracks will only appear in your library when the drive is connected.

What needles are best for use with Scratch LIVE?

We recommend Shure M44-7 needles for use with Scratch LIVE, due to their high output volume, excellent tracking and low record wear.

I have cue burn at the beginning of my control record, does that mean I need to replace it?

No, use the **track start offset** function (in the **setup** screen) to move the point at which tracks begin to a position further into the vinyl.

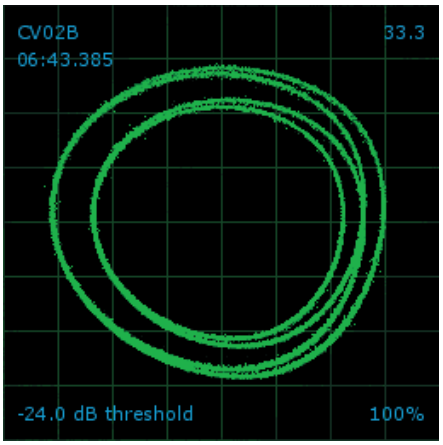
Why do none of the songs I have imported from iTunes show up in Scratch LIVE?

iTunes' default encoder is set to AAC, which Scratch LIVE currently does not support. You need to re-encode those files to a supported file type (AIFF, WAV, OGG, MP3). To change the default encoding preferences in iTunes, go to Preferences > Importing. Change the "import using" option to a supported file type and click OK. To re-encode a track, select/highlight it. Go to Advanced > Convert Selection to... . You can lose quality after you re-encode a track, so it's best to start from the original source if possible.

To keep up with the latest tips, visit the Official Scratch LIVE Forum online at scratchlive.net

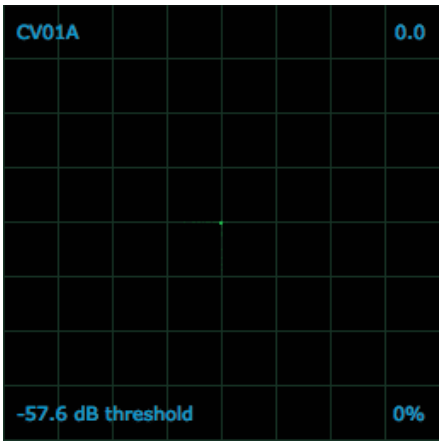
Scope reading and fixes

Most of the problems that occur with Scratch LIVE can be attributed to it not getting a good reading of the control signal from your records or CDs. These examples show what the scopes on the setup screen can look like to help solve possible problems. Some problems cause similar looking scopes, e.g. if your scope looks like the Dusty Needle one, the cause could be a damaged needle.



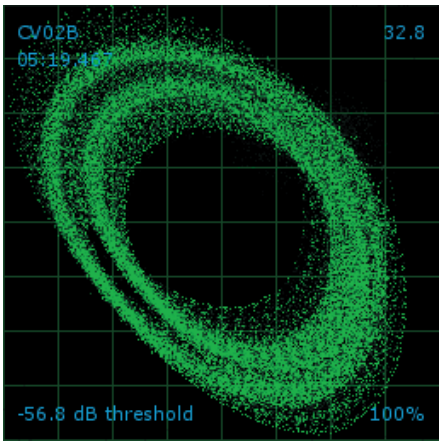
Good Signal

Clean signal with 100% tracking.



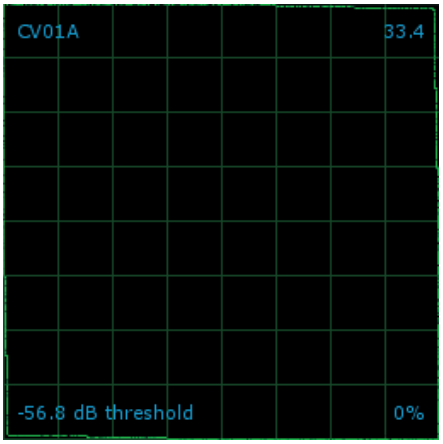
No Signal

TTM 57SL is not receiving any control signal — check your connections as shown on page 3.



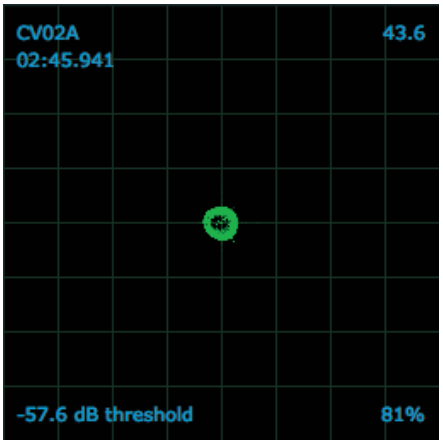
Bad Turntable Vibration

Bass is reaching the stylus. Try to isolate the turntable from the speakers.



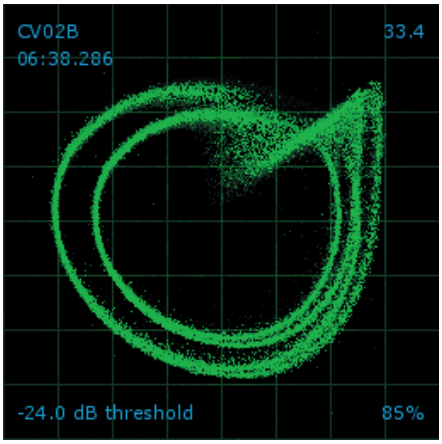
CD Player into Phono Input

TTM 57SL is set to receive phono level input. Set to the correct value on the **setup** page.



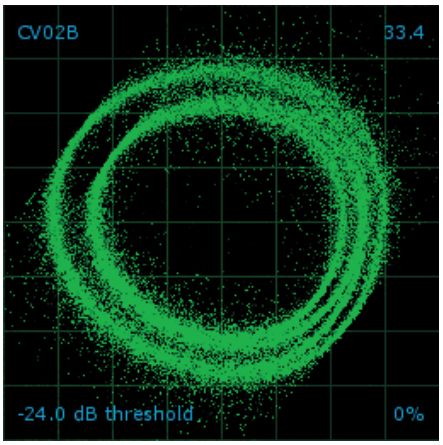
Phono into Line Input

TTM 57SL is set to receive line level input. Set to the correct value on the **setup** page.



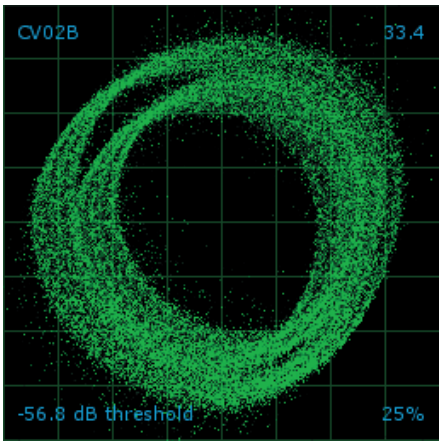
Dusty Needle

Dust is preventing the stylus from tracking the groove correctly. Clean your needle and the control vinyl.



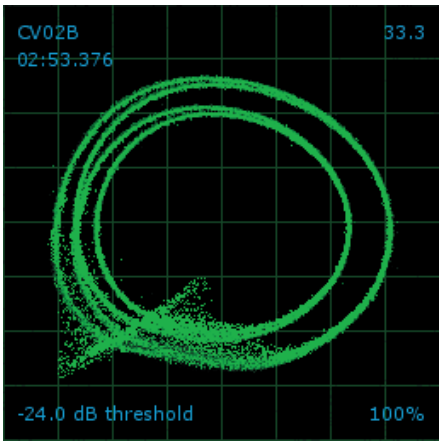
Unearthed

Very susceptible to interference. Attach the turntable's green (ground) wire.



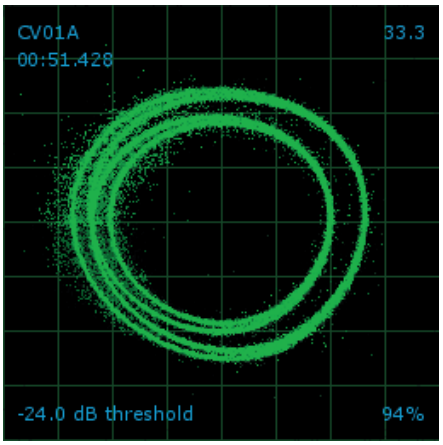
Using Piggyback Cables

Picking up huge amounts of noise, barely tracking. Connect your turntables directly to the TTM 57SL.



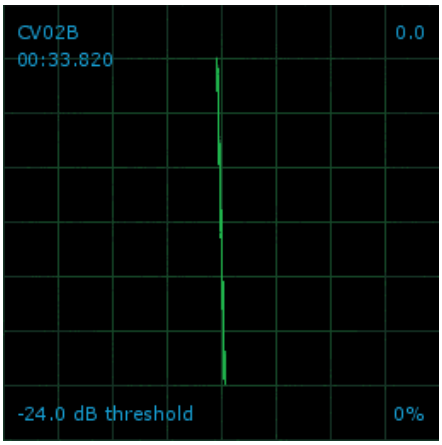
Damaged Needle

Try re-seating, cleaning or replacing your stylus.



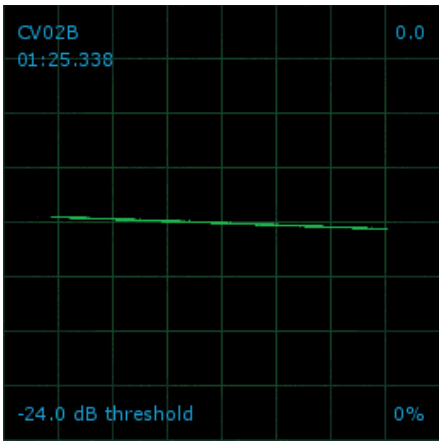
Record Burn

This section of the control vinyl has been worn. Swap sides or use the **track start offset**.



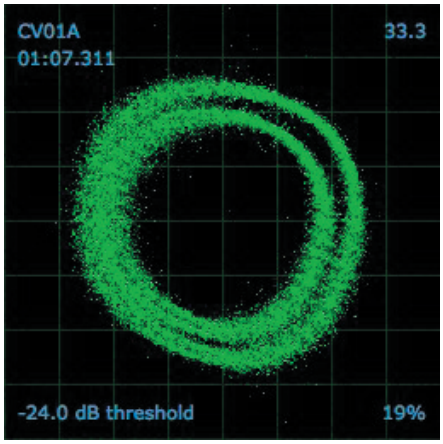
Left Channel Missing

The left signal from the needle is not reaching the TTM 57SL. Check the cable and cartridge connections.



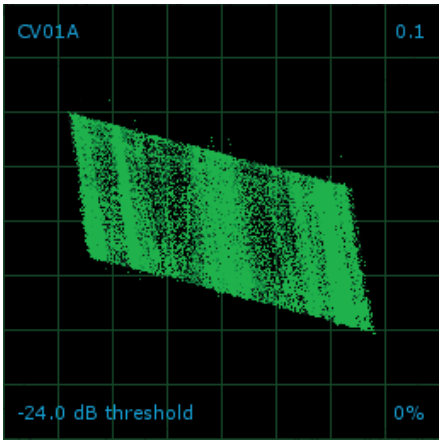
Right Channel Missing

The right signal from the needle is not reaching the TTM 57SL. Check the cable and cartridge connections.



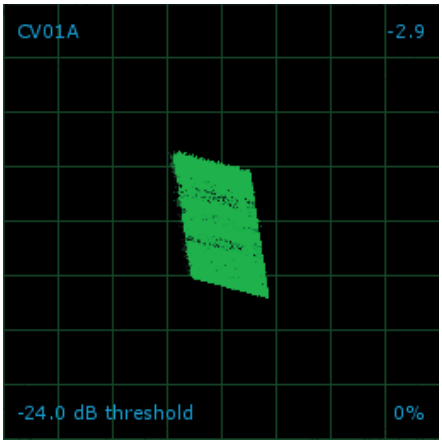
Bad Record Burn

Your record is very badly worn and the TTM 57SL is unable to track correctly. Swap sides or get new vinyl ASAP.



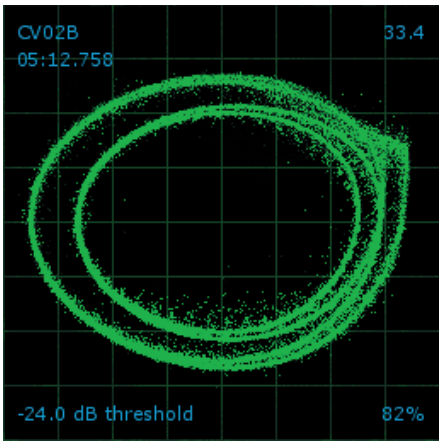
Left Channel is Noise

Left signal has been lost with a noisy loose connection.



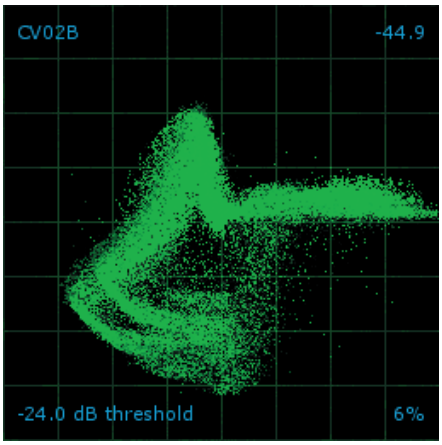
Right Channel is Noise

Right signal has been lost with a noisy loose connection.



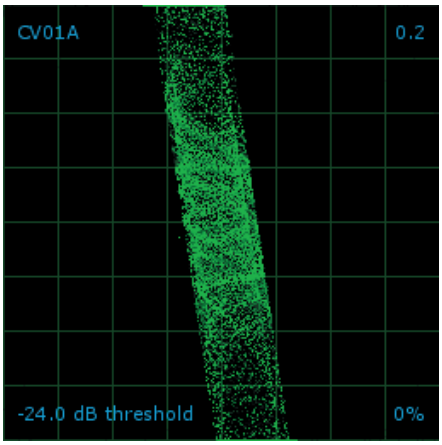
Tonearm is Slightly too Light

Susceptible to dust and vibration. Adjust the tonearm.



Tonearm is Extremely Light

The needle isn't sitting in the groove. Increase the tonearm weight.



Right Channel is Interference

Right signal has been lost with a noisy loose connection and left channel cross-talk.

Corrupt file descriptions and diagnoses	
Corrupt file: This MP3 contains invalid frames.	This MP3 contains frames which do not conform strictly to the official MP3 specification. Scratch LIVE can not be certain that this file will play back 100% accurately.
Corrupt file: This file contains corrupt frames that may result in audible glitches.	This file contains two or more contiguous corrupt frames. Since corrupt frames are replaced with silence, this could result in what might sound like an audio glitch.
Corrupt file: This file has been split. You should check the beginning for audio glitches.	The first MPEG audio frame in this file refers to audio that should be present before it but is not. This is usually the result of incorrect MP3 editing. Since a corrupt frame is replaced with silence and most songs start with silence, the resulting silence might not be noticeable. All the same, listen to the beginning of the song, just to be sure.
Corrupt file: This MP3 contains frames with corrupt data.	Decoding of an MPEG audio frame failed. This means that the frame contained invalid data. As usual with corrupt frames, this frame will be played as silence.
Corrupt file: This MP3 lost syncronization between the frame index and the frames.	This is a rare message and you should not see this. Do notify us if you see it and please send us the file that caused the message to appear so we can fix the problem.
Corrupt file: This MP3 is completely invalid and is not playable.	Self explanatory. Possible causes are disk bad sectors, file system corruption, wrong file types, wrong file extensions, etc
Corrupt file: This file contains invalid audio data.	Scratch LIVE encountered a lot of invalid data while looking for audio in this file. This message alerts you to the fact that the file you're trying to play contains corrupt data. This may, or may not, affect playback.
Corrupt file: This MP3 contains no valid frames.	No audio could be found in this file, which means it is completely unplayable as far as Scratch LIVE is concerned. Please make sure this really is an audio file.
Unsupported file: This MP3 contains multiple layers.	While scanning this file, Scratch LIVE found frames belonging to multiple MPEG layers. Scratch LIVE does not support MP3s that contain frames from multiple layers – some frames may be output as silence.
Unsupported file : This file is more than 2GB in size.	Self explanatory. At the moment, Scratch LIVE does not support files that are 2GB in size (or larger).
Unsupported file : This file has data blocks greater than 2GB in size.	This file contains chunks of data that are larger than 2GB. Scratch LIVE does not support files that are more than 2GB in size.
Corrupt file: This WAV contains no valid chunks.	This WAV file contains no recognizable WAV data. It is quite possible that this might not be a WAV file.
Unsupported file: This file's data is not in PCM format.	WAV files can contain data in several formats. Scratch LIVE only supports WAV files that contain data in the PCM format.
Unsupported file: This file has a sampling rate greater than 48kHz.	Scratch LIVE does not support sampling rates greater than 48 kHz. If you see this message, the simplest approach is to re-sample the audio at 48 kHz and re-save the file.
Unsupported file: This file uses more than 24 bits per sample	Scratch LIVE supports a maximum of 24 bits per sample of audio data.
Corrupt file: This WAV is incomplete.	Scratch LIVE expected more data in the file, but found none. This could be because the file was incorrectly truncated or because the data in the file is corrupt, causing Scratch LIVE to incorrectly estimate the amount of data present in the file.
Corrupt file: This file contains corrupt blocks.	This file contains blocks of data that report their size to be zero. This message was inserted to identify files that might cause lockups on previous versions of Scratch LIVE.
Corrupt file: This song contains no audio data.	Scratch LIVE could not find any audio in this file. Please check to make sure this file contains audio in a format that Scratch LIVE supports.
Corrupt file: This song contains invalid samples.	This file contains samples of audio that are too small to represent accurately and will therefore be truncated to zero. This should not result in any audible audio artifacts, but could cause audio dropouts on earlier versions of Scratch LIVE.

Magnetic Fader Q and A

Q: Will I damage the faders if I spray them with bad stuff or spill bad things in them?

A: *No*. The faders in the TTM 57SL are designed with materials highly resistant to corrosion and most chemicals. *There are no electrical contacts to clean or damage*. While bad things may change the feel of the faders, bad things will not affect the sound. To clean faders that have had a bad thing put in them, follow the simple instructions to the right.

Q: Can I install magnetic faders in any other mixer?

A: *Sorry*. The connectors may be similar, but the circuits are very different. Connecting the faders to anything other than the intended cable in the TTM 57SL could permanently damage them.

Q: Can I install other faders in my TTM 57SL?

A: *No*. The cable connections are specially designed for Rane magnetic faders.

Q: Can I install a different magnetic fader in my mixer or swap the position of my faders?

A: *No*. In order to achieve the highest possible accuracy, each magnetic fader is factory calibrated for the location in which it was shipped. For information about replacement or calibration, contact Rane Customer Service. If you remove the faders for cleaning, make sure you mark them. This helps you to put them back in the same location.

Magnetic Fader Maintenance

There are no electrical contacts to clean!

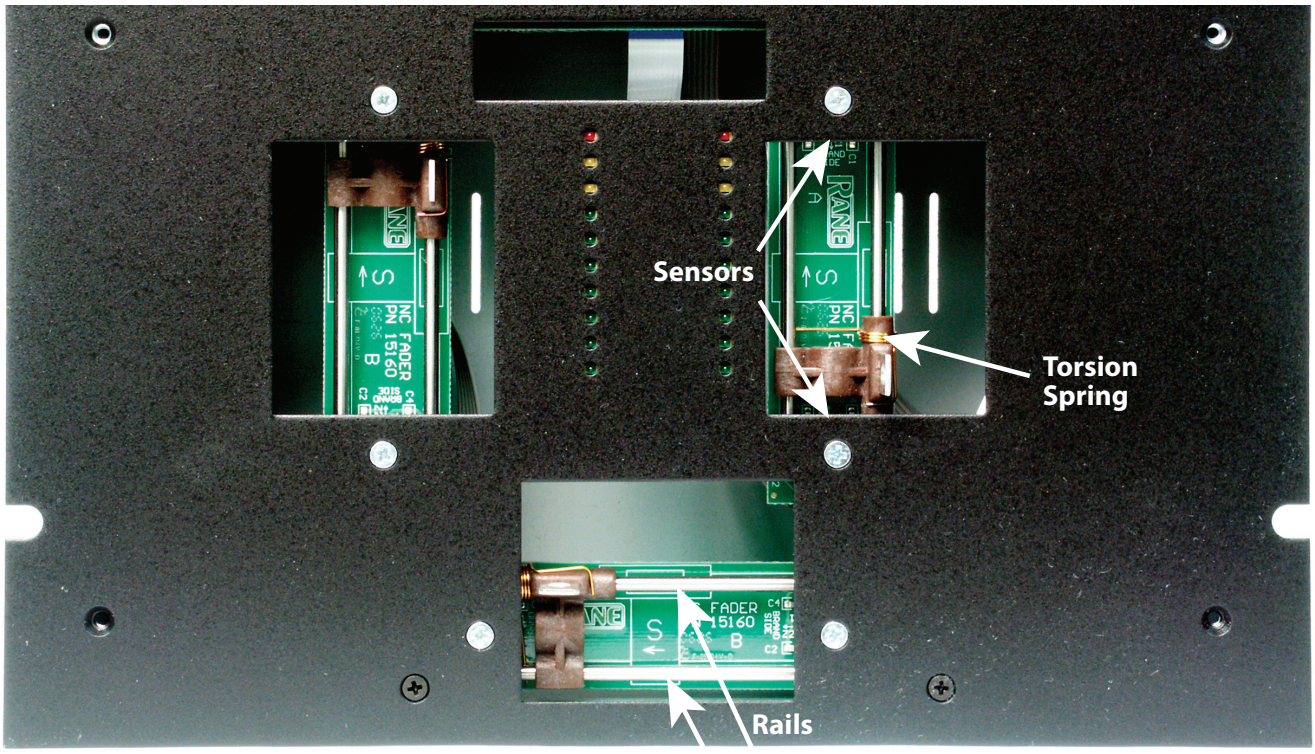
The faders in the TTM 57SL are designed with materials highly resistant to corrosion and most chemicals. While the faders will handle millions of operations, they may become dirty over time. Bad things may be spilled or sprayed into the faders. In either case, the faders are not damaged and the sound quality is unaffected. *Cleaning is only required to maintain the feel of the faders*.

The faders are self-lubricating and with normal use, should not require additional lubrication. If you wish, you can use a light silicone lubricant rated for use with electrical parts. This will help maintain the feel. We recommend Caig DeoxIT FaderLube F100 spray lubricant.

Order DeoxIT® F100 from CAIG Laboratories, Inc.

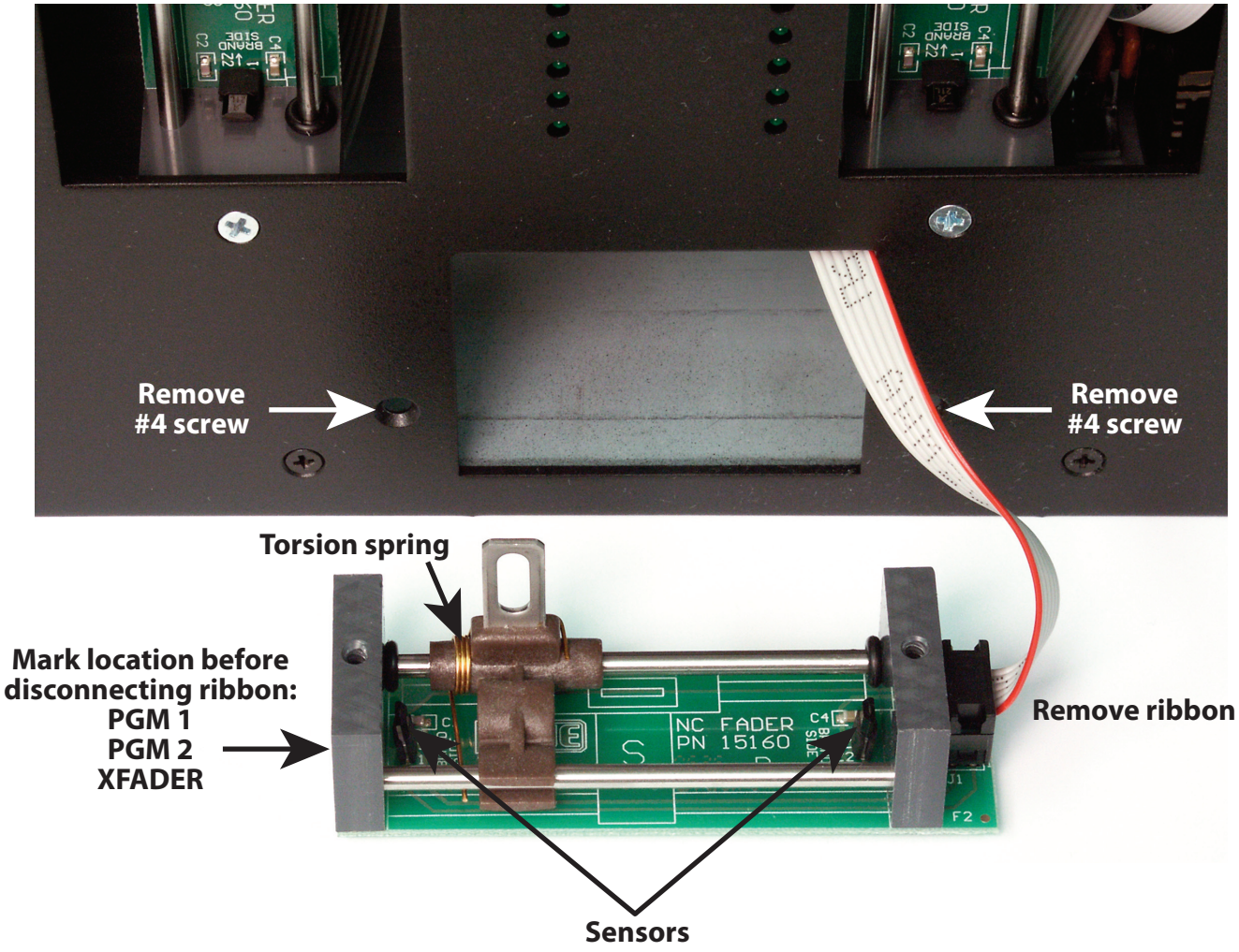
12200 Thatcher Ct.
Poway, CA 92064
Phone 858-486-8388
Fax 858-486-8398
Web *www.caig.com*

Never use a heavy lubricant or grease. Doing so will not damage the faders, but can undo the feel. If grease was used, it may be removed by following the cleaning instructions. Light lubrication is possible with the Lexan plate on. A couple of drops or a short spray will do it. Make sure the products you use are suitable for use with electrical parts that contain plastic.



Magnetic Slider Rail Cleaning

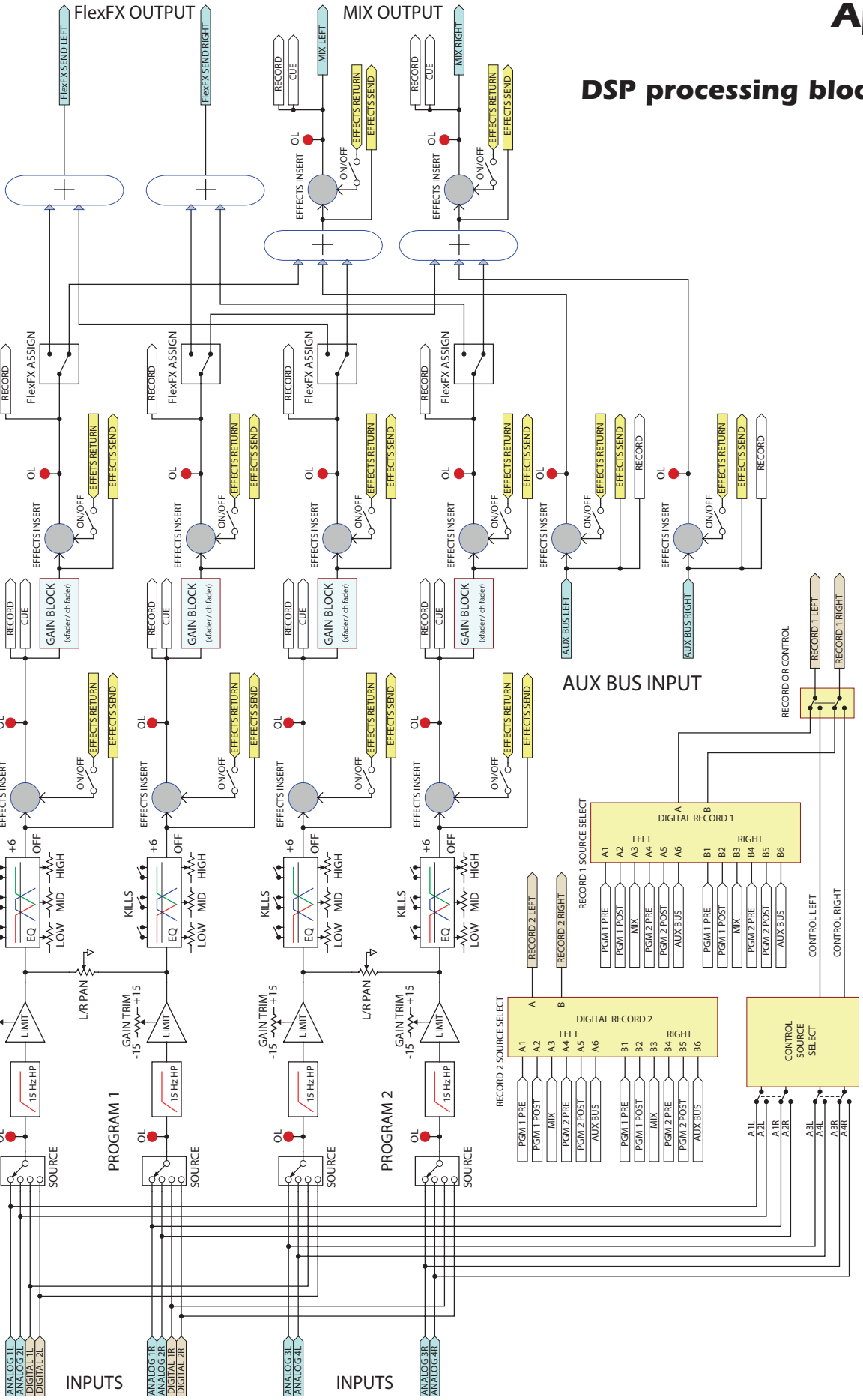
a. Move the carrier all the way to one side.
b. Use a soft lint-free cloth to wipe off the rails.
c. Add a drop of silicone lubricant (or quick spray from aerosol) to the center of each rail.
d. Move the carrier back and forth to distribute lubricant.
e. Do not bend the torsion spring or touch the sensors.



For more effective cleaning and lubrication, follow the directions outlined below:

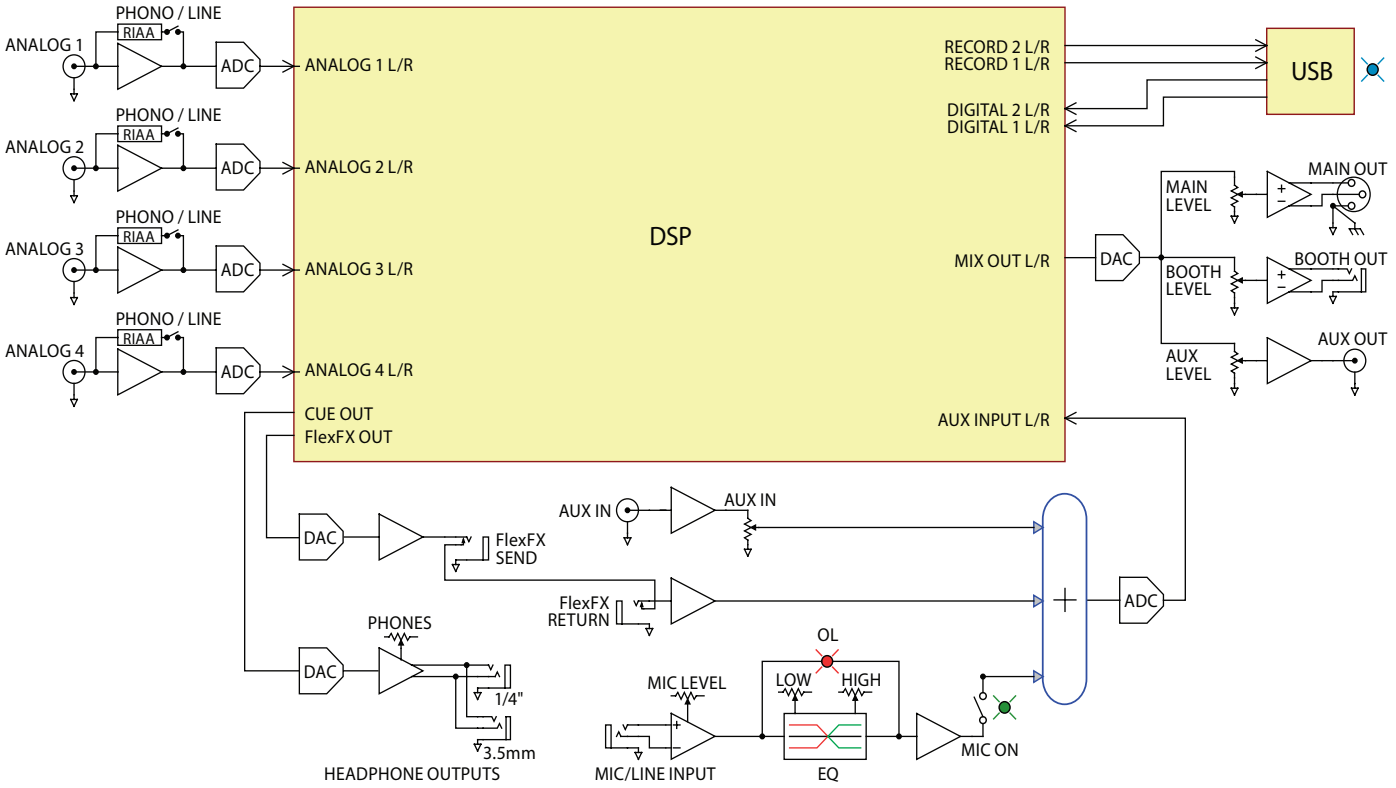
1. Required Tool: #1 Philips screwdriver
2. Disconnect the power.
3. Remove knobs from controls covered by the Lexan faceplate.
4. Remove the four, 4-40 screws attaching the Lexan faceplate.
5. Remove the Lexan faceplate. See the picture and instructions below. The rails of the fader are now accessible for normal cleaning and lubrication.
6. Remove fader from mixer if more thorough cleaning is required.
7. **NOTE:** *Do not disturb the position of the small sensors at each end of the Fader*. If you do, make sure the parts are standing straight before reinstalling.
8. **NOTE**: In order to achieve the highest possible accuracy, *each magnetic fader is factory calibrated* for the location in which it was shipped. If you remove the faders for cleaning, *make sure you mark them*. This helps you to put them back in the correct location.
9. Remove the fader by removing the two #4 screws securing it. Then disconnect the ribbon cable.
10. Sugary liquids spilled into a fader may be removed by thoroughly rinsing the part in hot water. Make sure the part is clean and dry before lubricating or reinstalling.
11. Removal of grease or other stubborn debris may require alcohol or contact cleaner. Make sure the part is clean and dry before lubricating or reinstalling.
12. To reassemble, reverse the disassembly procedure.
13. Problems? Contact Rane Corporation customer service at 425-355-6000.

DSP processing block diagram



Analog diagram

Simplified block diagram of the analog inputs and outputs around the DSP. Only one channel is shown.



Foot switch diagram

Rane does not manufacture or distribute the optional foot switch. The foot switch needs to be a passive pull-down device capable of grounding the TIP, RING or TIP and RING to get the three possible states. Good choices are the DigiTech FS300 or GNXFC. To the right is a basic diagram of a 3-switch foot switch. Three buttons gives the most flexibility, but you can also use one or two button footswitches (see page 35 for info on configuring Scratch LIVE to work with 1, 2 or 3 button footswitches).